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CLINICAL MEDICINE

A MONTHLY POSTGRADUATE COURSE

January, 1925 Vol. 32, No. 1

LEADING ARTICLES

The Prognosis and Treatment of Bronchial Asthma
By Alvin W. La Forge, M.D., LL.B., Chicago

Ultraviolet Radiation in General Practice
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The Treatment of Chronic Arthritis by the Parenteral Introduction of Protein Substance
By W. Busch, M.D., Hamburg, and Edward Ahlswede, M. D., Buffalo

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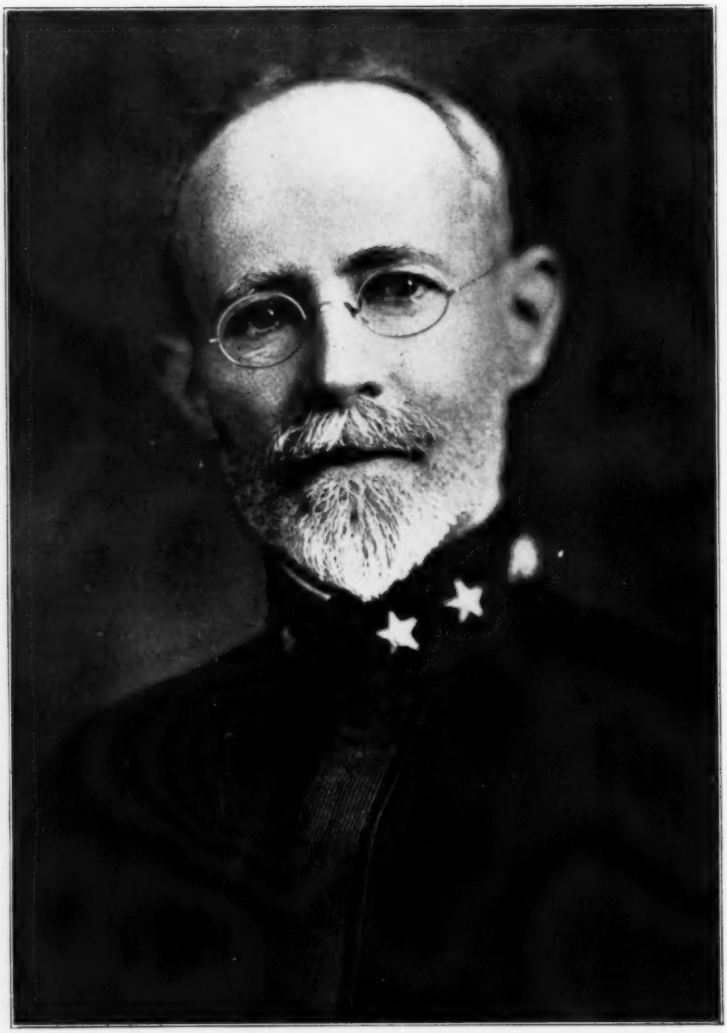

REAR ADMIRAL EDWARD R. STITT

THE SURGEON GENERAL OF THE U. S. NAVY

CLINICAL MEDICINE

A Monthly Postgraduate Course

Vol. 32, No. 1 **January, 1925**

Rear Admiral Edward R. Stitt, M.C., U. S. N. the Surgeon General of the U. S. Navy

REAR Admiral Edward R. Stitt, the Surgeon General of the U. S. Navy, was born in Charlotte, N. C., but later on was taken to South Carolina and became identified with that State, graduating from the University of South Carolina in 1885. In 1887 he was graduated from the Philadelphia College of Pharmacy and in 1889 from the University of Pennsylvania.

Entering the Medical Corps of the Navy the year of his graduation, he was soon assigned to the cruiser Baltimore, then the finest ship in the Navy. While attached to the Baltimore he served for approximately two months in the hospitals of Valparaiso, Chile, caring for the wounded soldiers from the battles of the Civil War which took place in Chile during the year 1891.

Upon assignment to shore duty he served as the Executive Surgeon of the Naval Hospital, Norfolk, Va., for about one year, again going to sea on the U.S.S. Chicago, the flagship of the European Station. After about two years' service on the European Station he was assigned to the State Department for service with the Nicaraguan Canal Commission. It was during this time, in connection with the work of the Commission in Nicaragua, Costa Rica and Panama, that Surgeon General Stitt became interested in tropical medicine.

During the Spanish American War he had charge of the statistical and medical records of the Bureau of Medicine and Surgery, and in this connection prepared the medical and surgical report of the activities of the Navy during this war. It was while stationed in Washington, during this period from 1897 to 1900, that Admiral Stitt studied bacteriology and pathology under Major Walter Reed and Major Carroll, of the Medical Corps of the Army.

Following a cruise in the training service on board Farragut's flagship Hartford, in which service there was abundant opportunity to study tropical conditions in the West Indies, South and Central America, Admiral Stitt was assigned to duty in Washington in 1902 as the head of the Department of Bacteriology and Pathology in the U.S. Naval Medical School.

In 1905, at the suggestion of Professor Welsh, of Johns Hopkins University, Surgeon General Rixey sent Doctor Stitt to London to study at the London School of Tropical Medicine. Upon receiving his diploma from this institution he spent a short period studying the diseases of Egypt, and in particular the work of Professor Looss, in Cairo.

Following a period of service in the Philippines and later on in Guam, Admiral Stitt returned to the Naval Medical School,

where he again became the head of the Department of Tropical and Preventive Medicine, which department was made to include the former Department of Bacteriology and Pathology. During this period he also served as the consultant in medicine at the Naval Hospital, Washington, D.C.

From 1908 to 1911 he was again in the Philippines, having command of the Naval Hospital at Canacao, and also teaching medical zoology in the Medical Department of the University of the Philippines. Returning to the Naval Medical School, he again served as an instructor until 1916, when he was made the Commanding Officer of the School.

During the World War he continued his service as head of the Naval Medical School and as President of the Board for the examination of Medical Officers for admission to the Naval service. His principal duty was as inspector of the various camps and hospitals from the standpoint of management of the various communicable diseases, which assumed such importance during 1917 and 1918. For his services in this connection he was given the Navy Cross. He was made Rear Admiral in the Medical Corps in 1917, and in 1920 became Surgeon General of the Navy.

From 1906 to 1920 he has at various times served as Professor of Tropical Diseases at Georgetown University and George Washington University and also as lecturer in tropical diseases at Jefferson Medical College.

The degree of LL.D. was conferred upon him in 1917 by the University of South Carolina and that of Doctor of Science by Jefferson Medical College in 1920. In 1921 the University of Michigan conferred upon him the degree of LL.D.

Admiral Stitt is the author of two books: "Practical Bacteriology and Parasitology," now in the seventh edition, and "Diagnostics and Treatment of Tropical Diseases," now in the fourth edition.

At present the Surgeon General is a member of both Central and Executive Committees, of the American Red Cross; President of the Board of Visitors, St. Elizabeth's Hospital; member of the Federal Board of Hospitalization; member of the Advisory Board of the Hygienic Laboratory; member of the National Board of Medical Examiners, and member of the Committee on Scope for the Revision of the U. S. Pharmacopœia,

Doctor Stitt married Miss Emma Scott in 1892 and they have three children, one son and two daughters.

GENERAL PRACTICE AS A SPECIALTY

Have you ever noticed that, when you pick up a certain fact, or acquire a new bit of knowledge, you begin to find, all about you, confirmations of that fact or sidelights on that knowledge, where before, you had found nothing of interest?

We were recently reminded of the above circumstance. In a conversation with several prominent medical specialists, the other day, one of them remarked that a patient of his had recently returned from a well-known medical institution, with an extensive pathology in one of his anatomical systems which had not been corrected, although its existence should have been obvious to any trained observer. He summed up his comments by saying, "The trouble with —— Hospital is that specialism is carried too far. My patient went there labeled 'heart disease,' and immediately was started on the routine examinations given heart cases, without having been given a general examination by a man who knew something about the human body as a whole. The head surgeon, when a patient comes to him, sees nothing but a human head, and to the gynecologist, all women are little more than ambulating uteri. What we need is more men broadly and carefully trained in general medicine."

That night, while reading the November, 1924, number of the *Century Magazine*, we saw a paragraph emphasizing this point (at the top of p. 12), which we should probably otherwise have missed. The next morning we found in *The American Physician* an article by Dr. J. Madison Taylor, of Philadelphia, accompanied by a thought-stimulating editorial on another phase of the same subject.

On p. 395 of the July, 1924, number of *The Medical Clinics of North America*, Dr. Geo. H. Hyslop, of Bellevue Hospital, New York, says, "I think that many of us realize that it is dangerous to have too highly specialized a division of labor, and that we have reached a point where further progress depends upon correlating the observations of different branches of the art and science of medicine."

Medical Economics, for November, 1924, had an editorial on "Personal Medicine vs.

Mass Health Protection," which dealt with the matter from a different angle.

The Chicago *Tribune*, for November 26, 1924, carried an article regarding the investigations of Pres. Walter Dill Scott, of Northwestern University, wherein it was stated that Pres. Scott and the committee of noted educators who worked with him had found that, in many parts of the country, there are plenty of specialists but a dearth of all-around doctors, so that, sometimes, a patient suffering from complex ailments will have to cover miles in making the rounds of specialists before he can find a doctor to care for him adequately.

It really seems to us as though the general practitioner was in a way to come into his own once more, if he is prepared to make himself the general practitioner of 1925, instead of being content to remain the doctor of the model of 1885. There has never been any real need for slipshod, careless or lazy doctors at any time, and the chance that such will achieve any notable measure of success is less now that it ever was, because their patients are learning what they have a right to expect in the way of professional services; but any man who is willing to work as hard at fitting himself to be a capable family physician as the specialist works at qualifying himself for his chosen specialty is, we believe, in a fair way to reach a position where he will be looked up to, not only by his patients and by his community but also by the very specialists who have been a little inclined, in the past, to condescend to their brethren in general practice.

OUR THIRTY-SECOND BIRTHDAY

With this number CLINICAL MEDICINE begins its thirty-second year of publication and, we believe, can safely be considered a fully adult medical journal.

You will note that the entire "dress" of the journal has been changed, from cover to body-type, and that, in consideration of its having attained full maturity, several of the department headings have been altered. You who have read this publication for years will soon learn where to find the things you are looking for under the new headings.

It is our rather ambitious purpose to make CLINICAL MEDICINE the foremost instrumentality in the country for the instruction and assistance of the general practitioner in enabling him to take the place among the leaders of modern medical thought to which he is justly entitled. We sincerely purpose to redeem the implied promise in our new subtitle.

We want to make CLINICAL MEDICINE "not the name of a thing, but the mark of a service." Not only do we desire to publish the kind of a journal which will be most valuable to you, but we are eager to help you with your professional problems in any way we can. We cannot, however, be sure we are giving you what you want unless you tell us so, or tell us what you *do* want; and, as the foundation of practical instruction lies in the publication of accurate and scientific reports of individual clinical experiences, we most earnestly urge every reader to give us all the benefit of the things he has learned in practice.

No general practitioner can, today, afford to be ignorant of what is being done in the specialties and the fundamental scientific fields, and we shall endeavor to procure for you articles which will meet this need in the most practical and useable form.

We hope that our progress in scientific value and professional usefulness will be more rapid than ever, and that you will feel that this, our thirty-second year, is the best year's value CLINICAL MEDICINE has ever given you. Please help us.

INCOME TAXES

Income taxation is undoubtedly one of the most important problems of the day. Every change in the law, every new regulation, every revised interpretation, has a direct effect upon the taxpayer's account with the United States Government. Yet experience shows that the average person does not know how to correctly prepare his income tax return.

Believing that our readers would be vitally interested in a subject of such import, especially at this time, it has been arranged to have an income tax column which will deal with this question from a simple, practical viewpoint.

In this connection, we have been fortunate in obtaining the services of Mr. M. L. Seidman, C.P.A., who will conduct this department. Mr. Seidman is a well-known tax expert and has been a close student of taxation in all its phases. He developed a plan of taxation that was submitted to the Senate Finance Committee in executive conference prior to the enactment of the Revenue Act of 1921.

Mr. Seidman is a senior member of the firm of Seidman & Seidman, Certified Public Accountants, a nationally known tax and accounting organization. He is also chairman of the committee of tax consultants of the Committee of American Business Men, an association composed of many of the leading business men of the country.

The tax column will appear in this and one or two succeeding numbers, and to further its scope, Mr. Seidman has consented to answer, through our columns, all questions that may be directed to him bearing on the subject.

Questions should be addressed to The Tax Editor, in care of this publication. All communications must be signed by the inquirer, but no names will be disclosed in the published answers.

INSTALLMENT ACCOUNTS—WHICH END?

There are some fortunate mortals who can walk into a store and buy whatever they want or need without even looking at the pricemarks. This includes Christmas gifts as well as other things.

At this particular season most of us are taking stock and wondering how long it will take to liquidate the various indebtednesses incurred during the Christmas season. We didn't intend to go in debt *this* year, but all the members of the family had to be remembered, of course, and a good many friends, also; and we had to have a Christmas celebration; and all the merchants were so kind about saying that we could get what we wanted at once, and pay for it at the rate of so much a month until it was settled. Not having to reach right down in our pockets and produce cash, we didn't consider the prices quite so closely, and now, here we are! It will take us until next Christmas to get clear again, and then we'll do it all over.

We are of the opinion that minor fiscal tragedies like that outlined above are at the bottom of a good deal of the falling off of the "Christmas Spirit" which was so notable a feature of the oldtime festival. In those old days there was no competition to see who would give who the most expensive presents. People delighted their friends by giving them such remembrances as they could make at home or procure by their own efforts; a pair of knitted mittens or socks; a turkey shot in the woods; a home-made doll or a basket of apples. With each gift went the sincere love and good wishes of the giver, ardently expressed and carrying conviction. And then they *celebrated*—by families, neighborhoods or whole villages—and next morning they loved their neighbors more than ever, because they had done them a good turn; and there were no bills to come in on the first of January and the succeeding months and take all the sweetness out of kindly acts and spoil the memory of the highest feast of the year.

Why not start at the other end of the installment plan this year? Almost every bank in the country is ready and eager to cooperate with you, by means of their "Christmas Clubs." Begin making your monthly payments the first of the year, but pay them to the bank instead of the installment house, and then, when next Christmas comes, you can look over your accumulations and decide how much you can spend on each gift and pay for it *before it is sent*. A gift that is paid for can absorb and carry to its recipient a lot more "love vibrations" than one bought on installments. Send a long list of Christmas cards, and *mean* what the inscriptions on them say, with all your heart.

If you will begin at the front end of your installment accounts instead of the back (and this goes for many other things besides Christmas presents, too) you will be, and *feel* the richer for every kind thought and word and deed you have sent out into the world—and there will be no "morning after," the first of January.

CASE RECORDS AND SCIENTIFIC MEDICINE

In the early history of our profession, medicine was purely an art, and surgery an adjunct and by-product of the barber's profession.

With the progress of time, a change has been coming over the situation, slowly at first but, of late years, with a rush, and the practice of medicine, while still an art, is coming more and more to be an exact and fully developed science.

It is probable that the main reason for this change and the condition upon which it necessarily rests is the making of adequate and accurate observations and the keeping of complete and detailed records.

The powers of observation of the average man are almost entirely undeveloped. He may pass along a certain street daily for

years and, at the end of that time, be unable to describe, sufficiently accurately for recognition, one single house along the line of his route. This faculty is susceptible of an enormous increase in development by consistent and thoughtful exercise.

The physician should, and as a rule does, possess keener and better trained faculties of observation than the average man and his success in his profession may almost be said to be directly proportional to the extent to which he has developed this faculty.

Every practitioner of medicine, from the chief of staff of our greatest hospital to the country doctor in the cross-road hamlet, has it in his power to contribute to the progress and development of scientific medicine. The physician in the great hospital fully understands how this is to be done, and the country practitioner can learn it. The rules are few and simple, but the carrying out of them is, for many men, extremely difficult; the results, however, adequately repay the time and effort spent.

The rules are these: First, study every case you see. Make careful and detailed physical examinations and record the results at the moment they are made. Second, have resort to laboratory examinations whenever it seems probable that they will throw light upon the case. Simple uranalyses and the more elementary bacteriological examinations can well be made in the doctor's office. The sphygmomanometer should not be neglected. When the office facilities are insufficient, the services of the various public and private laboratories (particularly the state laboratories, which are available in almost every state) should be made use of. Third, record all treatment given, of whatsoever nature, stating specifically dosage, method and frequency of application of all drugs employed and the details of all surgical measures instituted. Fourth, follow up the case with frequent notes of progress, made in detail, and changes in the methods of treatment employed. Fifth, upon the conclusion of the case, summarize briefly and specifically the patient's condition, both with relation to that when he was first seen and to normality.

There are now available to physicians a number of very complete systems for record-keeping, pocketbooks for bedside notes and other paraphernalia of this sort, but any physician who feels that he can not afford the financial outlay required for the procurement of any of these systems can work out one for himself, using ordinary four-by-six filing cards and studying the various articles and manuals upon the standardization of hospital records.

Such a line of procedure as above outlined will not only make a better doctor of every man who follows it but will also place him in a position to become a worthy and valuable contributor to current medical literature and the progress of medical science.

THE ANNUAL INDEX

The annual (1924) volume index is now being prepared, and any subscriber who would like a copy of it, to bind into his permanent volume, may have one at the cost of the postal card on which he makes his desires known to us. The index requires a good deal of time and labor for its preparation, and is rather expensive. Therefore, as some short-sighted physicians do not seem to care for it, it has not been our custom to bind it in with one of the regular issues, but to send it, free, to all who express a wish to receive it.

Medical literature, as embodied in the textbooks, is always several years behind the progress of medical science, because it takes that amount of time to collect and verify the material, get it into shape for publication, and have the book printed and marketed. For this reason, the only men who can keep absolutely abreast of the times are the ones who have the current medical literature at their instant disposal.

CLINICAL MEDICINE publishes a great deal of valuable, original material every year, and we hope to make it more and more practical and valuable as time goes on. If you have not been in the habit of having your numbers bound into volumes, why not send for an index and start now?

Verbum Sap.

ABSTRACTS AND BOOK REVIEWS

It would be an utter impossibility that all the articles of practical value which are written by research workers and clinicians in this country should be published in one magazine. Moreover, many of the articles appeal only to a certain group of students, and have no utility for the general medical reader.

Hundreds of medical books are published every year. A certain number of these are by men of national or international fame,

and these are, as a rule, new and revised editions of standard reference textbooks, with which every physician is familiar. A large number are written especially for advanced workers along certain technical lines. On the other hand, many books appear, annually, by men whose fame is not yet established, and a considerable number of such works are of the highest importance and value to the general practitioner.

Few people realize how much time and effort are required on the part of the editorial staff of a medical journal to prepare the abstracts and book reviews. Scores of books and magazines, are gone over for suitable material every month.

In conformity with the policy of CLINICAL MEDICINE to give the general practitioner the largest amount of solid, practical information in the smallest compass, the greater part of the current literature is gone over each month, and such articles are abstracted as appear to us to have the widest appeal. The reviews of the great, standard textbooks are confined to a statement of the changes in the new editions, while the chief effort is concentrated on telling our readers *just what they will find* in the smaller or less well-known volumes.

Considering the amount of mental and physical labor and discriminating judgment which are expended on these departments, we feel that our readers are missing an important part of the service we are trying to render them if they fail to read the abstracts and reviews carefully. If you see an article or book which you think should be discussed in our columns, please tell us when, where, and why, and we will see what can be done about it.

THE COMMON DRINKING CUP

There is probably no part of the human body, not even excepting the rectum, which presents so varied and abundant a bacterial flora, with so high a percentage of pathogenic microorganisms as does the mouth.

When one considers that such diseases as tuberculosis, pneumonia, tonsillitis, typhoid, scarlatina, infantile paralysis, diphtheria, influenza, measles and common colds are almost always transmitted by the secretions of the mouth and nose, and that syphilis is frequently so transmitted; and when one further remembers the intimate nature of the contact made by the mouth with a drinking vessel, one cannot feel surprised at the deep concern manifested by our health officials in urgently advocating the complete abolition of the common drinking cup, under all conditions whatsoever.

The agitation for such abolition began, in an organized way, about 15 years ago, and much has been accomplished. In most parts of the country all trains and railroad stations are equipped with individual cups. A large percentage of our schools, public buildings and industrial establishments are now equipped with either individual cups or with sanitary drinking fountains. Until, however, the public cup is as extinct as the dodo there should be no rest of relaxation of vigilance on the part of the guardians of the public health, prominent among whom are the physicians of our country.

There are at least three objectives to which every doctor in the country should lend the full weight of his influence:

1. The strict enforcement of all existing laws on the subject.
2. The cordial support of all zealous health officers who are working to this end.
3. The amendment of existing statutes and ordinances so as to make them uniform all over the land; in conformity with the most modern sanitary thought and practice; and sufficiently drastic to have teeth in them.

Any physician who desires to help in this good work will do well to write to The General Health Bureau, 542 Fifth Avenue, New York City, for the digest of the laws on this subject which they publish, and then tear out "Friend or Foe," on page 2 of that pamphlet and display it in the post office, city hall or some other public place, where as many people as possible can see it.

Then camp on the trial of your board of aldermen, state legislators and other law making and law enforcing agencies until the three ideals set forth above are realized.

PILES

There lies before us a letter from an interested and thoughtful physician in Canada, calling attention to the fact that little seems to have been done in a constructive way by the profession in the treatment of hemorrhoids without resort to surgery of one kind or another.

That there is a field for thought and activity along this line is very definitely indicated by the fact that "pile institutes"

of one sort or another, usually advertising in the public prints to cure this condition "without the knife," are thriving amain.

There is no doubt that treatment by diet, regulation of habits and the administration of certain drugs and local applications will do very much for the relief and often for the cure of some cases of hemorrhoids. A bland diet, regulation of habits of evacuation and local cleanliness are always of service. Aesculin and collinsonin have been repeatedly recommended and seem frequently to have achieved very marked results. Locally, ichthyol, in one form or another, is no doubt of great benefit.

The reasons why some line of general treatment for this disease has never been worked out appear to us to be two; first, the fact that, here, as in most other conditions, we are treating a patient and not a disease, wherefore iron-clad standardization of methods is impossible; and, second, because the average general practitioner fails to keep accurate and detailed records of his cases, such as would be useful and necessary in making any true scientific study. In this connection, read the editorial on "Case Records and Scientific Medicine" in this number (p. 4).

If every reader of CLINICAL MEDICINE would immediately set himself the task of assisting in the scientific investigation of the nonsurgical treatment of hemorrhoids, it would be but a short time until we would have a mass of clinical data at hand from which reliable and highly valuable deductions might be drawn. We most earnestly urge upon every physician who reads this, that he set about experimentation in cases of this sort; first, familiarizing himself with the anatomy and physiology of the parts concerned and with the pharmacological action of the medicaments which he proposes to employ and then keeping a careful and detailed record of the cases which he treats, with dosage, method and frequency of drugs and local applications employed and an accurate and concise statement of the results obtained. These records, when completed, will, if forwarded to this office, be studied and compiled in the form of an article which will really carry authority and weight. In this way, the limited individual experience which falls to most physicians and which by itself is of little value, may be, by cooperation and intensive study, developed into a highly valuable contribution to scientific medicine.

SMALLPOX PREVENTION

For the protection of public health, restrictive provisions have been made and enforced ever since it was realized that certain diseases are communicable from one person to another. The principles of quarantine are outlined clearly and effectively in Leviticus and were enforced strictly for the benefit of the people and without regard for those blind or wilful objectors who might resist because of self-interest or from a desire to be different or for whatever other reason.

The fact that an immunity is acquired against certain infectious diseases, notably the exanthems, including smallpox, had been known for centuries when Edward Jenner learned of the popular experience that passing through the mild disease, cowpox, confers immunity from the virulent affection, smallpox. It was known that even mild attacks of other exanthems equally protect against future ones, and it was quite logical to reason that cowpox was really an attenuated smallpox. Hence, if people could be made to acquire cowpox, from which humans recover virtually always, they would be protected against smallpox and, in time, this awful scourge of mankind might be rendered innocuous.

The practical application of the ratiocination, through the prophylactic vaccination introduced by Jenner, and its striking success in lessening and almost obliterating the ravages of this disease, where the method was applied consistently, constitute one of the most impressive proofs of the progress of medicine in the last hundred years. We of today can not possibly realize the horrors of smallpox in former times, when it was a constant visitor in all countries, causing numerous deaths and untold suffering, misery and unspeakable disfigurement in the survivors. Macauley's graphic description should be read by those who consider the matter lightly.

Today, smallpox is taking its accustomed toll of thousands of lives, each year, in China, India and Russia, where vaccination is virtually non-existent. Between the years 1918 and 1922, there were 647,497 deaths reported from this disease in India alone. In occidental countries, the prevalence of smallpox stands in almost direct relation to the enforcement of vaccination. The serious epidemics that have occurred, since the World War, in England, Australia, Mexico, Brazil, Argentina, Chile, Costa Rica, Santo

Domingo, and Canada, wrought their ravages almost solely in proportion to the number of unvaccinated persons in the communities into which the disease was imported, possibly by one single case (as, for instance, in the epidemics of Montreal, in 1885 and 1886, in which 3,164 persons died). The assertion of antivaccinationists, that smallpox is a filth disease and that it is controlled by sanitation alone, does not hold, as has been demonstrated many times. For instance, in Massachusetts, where vaccination is enforced strictly, the prevalence of smallpox is negligible, as the disease appears only in sporadic cases. On the other hand, in Connecticut, where the enforcement is indifferent, the year 1922 witnessed more smallpox cases than had occurred in that state in the whole of the twenty preceding years. The disease appeared in a city where compulsory vaccination of school children was not carried out and where the antivaccination sentiment was strong. Of the 447 cases reported, 404 were in unvaccinated individuals. No cases of smallpox occurred among vaccinated school children. Yet, it must be admitted that general sanitary conditions are about equal in both states mentioned.

England has paid dearly for listening to the clamor of false prophets who preached reliance upon the supposed protection afforded by isolation and sanitation. Gloucester particularly was pointed out as an example of a town protected by sanitation alone. As early as 1885, a local antivaccination society had been formed. A vigorous campaign was begun and antivaccinationists were elected to the Board of Guardians. Instructions were given that no steps were to be taken to enforce the vaccination acts. About 10,000 children remained unvaccinated. Smallpox came into the city from an outside source and, by July 1896, there were 2,935 cases of which 443 ended fatally. Of these 443 deaths, 281 were in unvaccinated children under ten years of age. Throughout England, smallpox is on the increase and the people of that country have the antivaccinationists to thank for this new visitation of their old-time plague. It is the wilful, blind resistance of the vociferous minority that has brought this calamity upon the country.

The fatuous error of ignoring the evidence of experience is illustrated in our own country likewise. California, among other states, had tested the efficiency of vaccination in controlling smallpox and had learned its value. Then, in 1911, the antivaccination agitators prevailed and the compulsory law was repealed. Since then, smallpox has been coming into its own again and, with the constantly growing proportion of the unvaccinated, the unprotected furnish a fair ground for its spread. The reported cases passed the one-thousand mark in 1918, exceeded 5,000 in 1921 and, during this year, an epidemic has been giving the people of the state cause for grave concern. There have been 2,878 cases of smallpox reported in California during the first two months, that is 849 cases more than occurred during the whole of the preceding year.

For several years, the energetic measures taken by the Chicago Health Department against all communicable diseases had been instrumental in lowering the death rate from these diseases materially. Now, only last summer, some well-meaning but misdirected persons joined forces with the quacks, the charlatans, and the ignoramuses to set aside compulsory vaccination in Chicago. Against the remonstrances of the health department, this backward step was urged before the Council and it will be brought up again and again, unless the people indicate in unmistakable terms that they do not wish to retrace their steps but that their eyes are directed forward.

If physicians required any proof of the effectiveness of prophylactic vaccination, in the case of smallpox prevention, they could easily obtain it from the publications of "The Friends of Medical Progress, Inc.," 45 Newbury Street, Boston, Massachusetts. An eloquent argument is contained also in the publications of the Metropolitan Life Insurance Company, New York, especially the *Statistical Bulletin* which, we believe, will be sent to physicians on request. It is one of the foremost duties of physicians to teach disease prevention. The prevention of smallpox, by careful and persistent vaccination, requires no discussion. Its merits have been demonstrated definitely and completely.

Leading Articles

The Prognosis and Treatment of Bronchial Asthma

By ALVIN W. LA FORGE, M.D., L.L.B., Chicago, Illinois

THE management and treatment of bronchial asthma is so dependent on certain prognostic factors that a brief outline of them is necessary.

The factors of prognostic significance are: the age of the patient; the presence and nature of the extranasal conditions; the duration and severity of the bronchospasms; the type and amount of nasal pathology present; and the history of previous nasal surgery. These are the factors that enable us to determine what is to be done, how long it will take to do it, and what result can be secured.

The Age Factor

The age of the patient is the chief determining factor in estimating the length of time required to secure an ideal result. Let it be clearly understood at the outset that an ideal result does not mean the mere stopping of bronchospasms; it means much more. It means the stopping of all bronchospasms plus the correction, as far as humanly possible, of every condition which could induce a return of the attacks.

For purposes of prognosis and treatment, asthmatics are divided into three classes according to their age: First, those whose nasal structures have not attained their complete growth, roughly, up to sixteen or eighteen years, in whom the ideal result can so often be obtained without any operative procedure. Second, asthmatics from sixteen or eighteen years up to sixty or sixty-five, in whom we prefer not to recommend nasal or other operations, but, if compelled to, can do so without subjecting them to any undue risk. *We do not recommend any operative procedure in any class of patients until every nonsurgical means has been tried or is manifestly futile.* If we do find, however, that some surgical measure will greatly shorten the course of treatment, we can safely employ it in this class of cases. Third, asthmatics of sixty years or over with more extensive and advanced pathology whose lessened recuperative power makes their response less prompt. Sometimes a patient's advanced condition puts him in this class, even though he is considerably younger.

The two extremes of age—Class One, the very young, and Class Three, the older, or advanced patients, represent our most difficult cases. Class Two, the middle class, and fortunately the largest by far, represents the ideal class for treatment. The results obtained in this class are more perfect and are secured in much shorter time.

The reason that Class Three—the very advanced cases—is slower to respond is obvious. They have broken-down, senile constitutions, damaged hearts or kidneys, are perhaps markedly emphysematous with permanent structural changes in the lungs, frequently reveal infected gall-bladders or gall-stones, oftentimes terrific nasal infections; and presenting this extensive pathological picture are incapable of undergoing the necessary measures for its correction. Completely and permanently to cure such a case is often difficult; yet, it is at times amazing to see the comfort and the relief which can be secured even in such advanced cases if proper measures are cautiously and intelligently applied.

The reason that Class One—the early and youthful cases—is difficult, is due not to any medical shortcomings, since the treatment follows the same principles as in older patients, but because the child must be under observation for a longer period of time. The difficulty with these patients lies

in the fact that the result which can be secured in children is in direct ratio to the cooperation and intelligence of the parents. The physician and the asthmatic child both are at the mercy of the parent's neglect. We must constantly bear in mind, in treating asthmatic children, that merely stopping the attacks does not constitute our aim. Our object is to check that progress of events which has already produced asthma and which renders the child a probable candidate for recurrence later in life. Our aim is to lift that child out of this class whose condition is such that in all likelihood bronchospasms will reappear.

In the whole realm of medicine there is no greater delusion than the one that children outgrow their asthma. True, the attacks may disappear for a time, but, if head-colds persist and become increasingly severe, the ultimate reappearance of the disease is a certainty. Most of our patients bring us a history of certain intervals of relief, often occurring as a fancied result of some form of treatment and just as often where no treatment whatever had been used. This later recurrence can, fortunately, be avoided if the child is kept under observation until such time as the nasal structures have attained their full development and are then free from infection, gross deformity and ethmoid irritation. This is no small achievement. It may require several years of painstaking care, not necessarily daily attention but periodical observation at least. It requires the highest degree of intelligent cooperation from the parents, and it is a period which may bring disappointment due to the occasional reappearance of bronchospasm, even after long periods of relief. Nevertheless, the attacks will become fewer and less severe, the head colds will become less frequent, and, winter by winter, the child's improvement will become more apparent. Intervals of relief, sometimes lasting over a considerable period, may occur, but we do not delude ourselves nor the parents into thinking that this is permanent. *It is during these long periods of relief that parents, in spite of our persistent warnings, become lulled into the belief that all is well, and their neglect to have the child report for observation or treatment sometimes results in the reappearance of attacks.*

To take an asthmatic child at the age of ten and by the time he is eighteen to have corrected all those conditions which have induced and might reinduce asthma is a triumph the credit for which may be shared equally by the doctor and the parents. *The greatest difficulty with these cases is that of educating the parents to give this necessary cooperation.*

In a general way, therefore, but subject to many exceptions, the age of the patient enables us roughly to estimate whether the ideal result can be obtained quickly or will be long drawn out.

The Presence and Nature of the Extranasal Conditions

The occasional good result sometimes unexpectedly obtained in asthma by nasal surgery has monopolized the attention of the profession. This, together with the now recognized fact that ethmoid irritation exists in every case, is leading the medical profession to over-emphasize the nasal factor. *The fundamental basis of our conception is that asthma is dependent upon two factors, toxemia and ethmoid irritation, the first of which is unrelated to the nose.*

The extranasal factors are of prognostic importance in three ways. Their number determines the number of steps required to secure the desired result; their nature determines how much time must be added for their correction; and the amount of infection or irritation removed and the permanency with which it is removed determine the degree to which the ideal result will be secured.

It is obvious that an asthmatic of forty-five years with severe bronchitis, chronic tonsil infection, badly diseased teeth, a badly diseased gall bladder filled with stones, who is constipated to the point of extreme toxemia, offers every chance for a quick and dramatic improvement. Elimination treatment alone can secure it in such a case. Each condition, as it is corrected, may be followed by a temporary but complete relief. In such a case, predominantly extranasal, to correct the nasal factor alone would secure little if any relief, but correction of the extranasal factors, followed by the correction of the nasal factor, will secure a complete and long-standing result.

So another measure of your results is the measure of the skill of the internist in finding and the degree of skill in correcting these extranasal sources of infection and irritation. We must revert to our general rule which governs the prognosis, "Exclusive of thoracic pathology, asthma is curable in direct proportion to

the completeness and permanency with which one can accomplish two things—remove all sources of toxic absorption and restore normal physiology."

The Duration and Severity of the Bronchospasms

The duration and the severity of the bronchospasms is of prognostic value in that it is an index to the length of time required for, and the completeness of, the result that can be secured. It is easy to understand that an asthmatic of forty-five who has had one or several daily attacks over a period of several years will require more time than a patient of the same age whose attacks have only recently developed. On the other hand, a patient who had a few slight attacks early in life and later suffered a recurrence which was not very pronounced, offers more chance of rapid recovery. In a general way, it is not the number of years the patient has been asthmatic, but the severity and persistence of his attacks that have the greatest prognostic value. This is not surprising, as the more severe and continuous the attacks the more the resulting thoracic damage.

Our attitude toward this secondary thoracic damage is undergoing a slight change with added experience. We believe that, a few years ago, we over-emphasized its importance. It is surprising to see, particularly in growing children, the rapidity with which these damages subside as the bronchospasms disappear. Even in adults, six months', or a year's relief from spasm is oftentimes followed by a remarkable degree of return to normal thoracic measurements and physiology. In cases with a cardiac factor, reduction in the size of the heart is quickly observed. The complete disappearance of moist rales, wheezing and evidences of what at first appeared to be marked emphysema, has shown us that these secondary changes are capable of far greater improvement than we had at first supposed possible.

There are two ways of estimating the amount of permanent thoracic damage. One consists of an examination of the chest in the routine way, determining, if possible, the amount of spasm present. Then give a dose of adrenalin sufficiently large to remove all spastic effects, reexamining the chest after having waited sufficiently long for the adrenalin to act. The difference in physical findings is striking. The degree to which the lungs become normal under the maximum effect of adrenalin represents the minimum amount of improvement that can be secured when the bronchospasms are continuously arrested by treatment. In making such a test, we must make allowance for the fact that whatever findings are present, due to mucus accumulation in the lung and chronic bronchitis, will also be removed, due to the eradication of their causes, during treatment. Another way of arriving at a tentative estimate of the degree of normal thoracic physiology which can be permanently secured, is to ascertain how recently and for how long the patient enjoyed an interval of complete freedom from all manifestations of thoracic disorder. This means, not only freedom from bronchospasms but also from profuse expectoration, attacks of coughing, slight attacks of "tightness" across the chest, shortness of breath on slight exertion or when exposed to high winds, etc. If the history reveals that bronchospasm has occurred at various intervals, even for many years, but the patient has within the past few months experienced an interval even of a few weeks during which time he has been entirely free from all manifestations of thoracic disorder, this too can be accepted as a measure of the minimum thoracic improvement which can be rendered permanent if the bronchospasm is completely arrested.

Experience has proven that, originally, we had exaggerated the importance of these thoracic changes as a possible factor in prolonging the necessity for treatment. It begins to be clear that, being secondary changes, they are not of primary importance when their cause is removed, so that we now attach more significance to the other prognostic factors in determining the length of time required to secure complete relief.

The Type and Amount of Nasal Pathology Present

This factor I will not outline in detail, as the February issue of CLINICAL MEDICINE will contain an article by Dr. Burton Haseltine on the relation and differences between hayfever and asthma, and the March issue an article on the rhinological phases of the treatment of bronchial asthma which will set forth every detail of the significance and also the treatment of this nasal factor.

Let it suffice to reiterate our rule for prognosis, "Exclusively of permanent thoracic pathology, bronchial asthma is curable in direct proportion to the completeness and

permanency with which two things can be done—remove all sources of toxic absorption or irritation, and restore normal physiology." This rule, which applies to the asthmatic as a whole, is equally applicable to each factor in his case, be it nasal or extranasal. Let it not be understood that in correcting the nasal factor we are limited to the unsatisfactory operative measures, sinus drainages, sprays and nasal suction or douches so generally used. It is here that the Dowling treatment has, during twenty years, most clearly demonstrated its effectiveness. Without this treatment we would be considerably handicapped and good results would be much less common.

The History of Previous Nasal Surgery

As stated before, every rhinologist of wide experience knows, and the entire profession realizes that nasal surgery is sometimes beneficial in asthma. The result has been a wholesale slaughter of nasal structures, in a blind attempt to do that unknown thing which in an occasional case results in such startling success, but undertaken with no clear understanding as to the precise thing to do. It is on this point that Dr. Haseltine has made a contribution without which no rhinologist, however skillful in other ways, can successfully meet the asthma problem. He has demonstrated that, in a patient not previously operated upon, the only area in the nose capable of producing bronchospasm is the ethmoid area, and that in asthma the ultimate aim of all surgical or nonsurgical measures employed in the nose is to permanently free this area from infection and irritation.

We see daily these sufferers, with septa incompletely corrected, their frontal sinuses and antra opened and irrigated for months, but with ethmoids, the only area capable of producing bronchospasms, absolutely untouched. Or, worse yet, the ethmoids may have been operated upon, but no treatment used afterward to prevent the excessive accumulation of granulation and scar tissue, which, in time, again bottles up the ethmoid infection in spite of the operation which, in its purely surgical aspects, was perhaps well done. Such surgery, when not followed by proper after-treatment, is not only worthless but disastrous. It leaves the patient worse off than before because it precludes the possibility of relieving the patient by a simpler and less radical operation. Hence, the prognostic significance of the history of previous nasal surgery can be summarized as follows: the more mutilation present, the more ethmoid blocking present from granulation and scar tissue, the longer the ethmoid infection has had time to accumulate, the longer it takes to restore normal or approximately normal physiology.

So much for the prognostic factors. It is clear then that our prognosis is based upon definitely measurable factors which permit of a comparatively accurate estimate of the result that can be secured and the length of time required to secure it. Unlike other forms of treatment, when a patient asks how much can be done in his particular case, we are not obliged to confront him with a table of statistics showing that, based on past performance, a certain percentage has been helped and a certain percentage has not. Under all other methods of treatment, the most accurate prognosis that can be offered is that the treatment has helped a given percentage and that this particular patient's chances are supposed to correspond to this percentage. For example, if the treatment is supposed to have helped twenty-five percent of the patients, his chances of improvement are supposed to be twenty-five percent. The fallacy of this is obvious. With the prognostic considerations we have outlined, we can tell any particular patient in advance approximately what measure of result can be secured in his own case and about the length of time necessary to obtain it.

In children and the older cases it may seem as though the achievement of an ideal result is a tremendous task. So it is. It is sometimes one of the biggest undertakings in the practice of medicine. Its magnitude explains why the brief and irrationalized attempts to cure asthma with a pill or a vaccine are so disappointing. To effect the ideal cure of bronchial asthma, it may be necessary at some stage or other to utilize the services of the dentist, proctologist, gynecologist, urologist, general surgeon or any other specialist in the field of medicine. This shows the inadequacy of all former methods of treatment and explains the apologetic and helpless attitude which even the most renowned physicians are obliged to assume when such methods necessarily fail. It explains why one of our foremost authorities was honestly compelled to state recently, "After all, there are only two things to do—use morphine or adrenalin and try to find a suitable climate." The words "try to find" epitomizes the

situation of hosts of asthmatics who are securing only temporary periods of relief or are progressively getting worse in California, Colorado, Arizona, New Mexico or Florida. It explains the medical alibi, "Well, after all, asthma is incurable." No wonder that practically every doctor and almost every patient is skeptical to any claims of success in curing bronchial asthma.

Treatment

It has become apparent to any one who has followed the articles so far that we do not depend for success upon any of the now discredited measures, such as the use of bromides, iodides, phylacogens, breathing exercises, bronchoscopic medication, food or bacterial vaccines, calcium, ultraviolet ray and endocrine therapy, or sympathectomy. Each of these measures has, at one time, been heralded as the long sought cure for asthma, only to be in its turn discarded after the test of clinical experience. There are two respects in which the treatment we recommend fundamentally differs from all of these; first, that with the lapse of time and wider application it becomes more and more dependable; second, it is the only method which does not depend upon some procedure that in a nonasthmatic would be useless and possibly harmful. A unique feature of this method is that no procedure is at any time employed that would not be beneficial to the patient were he not asthmatic.

The internist's role begins with a general but painstaking diagnostic examination directed toward the discovery of all sources of septic absorption, perversion of metabolism and elimination, sources of irritation to the nervous system and all other evidences of disturbed physiology.

A history is taken which contains all ordinary data but also includes the additional data pertaining to the bronchospasms, the date of their first appearance, the number, severity and duration of the attacks. In taking the history, bronchospasms are accepted as being only one of the presenting symptoms. Careful search will usually reveal many other pertinent symptoms, all of which are carefully analyzed as to their causative or contributory significance.

A complete physical examination is then made including all of the usual laboratory investigations and x-ray studies. Skin tests are not made. We do not make any skin tests upon asthmatic patients because, long before the skin tests were invented, better results were being obtained by us in asthma than the most optimistic skin test enthusiasts are claiming today.

The physical examination having been completed and every clue suggested by the history or physical examination having been thoroughly worked out, an inventory of the findings is then made. Now comes the important procedure of checking-up between the internist and the rhinologist.

Experience has taught us that, before asthma can develop, in any patient, there must exist in that patient a certain quantitative measure of infection. Therefore, the first reason for checking-up is to assure ourselves that we have found enough to explain logically the existence of asthma. The second reason for checking-up is to enable us to make an approximate evaluation of the findings and to outline a plan of treatment which disposes of all the factors in their proper order.

This process of checking up our findings has taught us many things. It has taught us that this quantitative measure of infection which must exist to produce asthma, can exist entirely in one focus in the body or that it may be distributed throughout several. For example, one may find a case of chronic nasal infection, with large masses of polyps in the nose and absolutely no source of infection discoverable elsewhere. In another case we may find very slight nasal infection, but the remainder of that quantitative measure of infection which must exist, can be demonstrated in the tonsils, the teeth, the gall-bladder, appendix, fallopian tubes, prostate, or seminal vesicles, etc.

Clinical experience has taught us that in very young children the usual sources of infection are in the nose and tonsils. We are indebted to Dr. L. E. Hetrick, of New York City, for a postmortem dissection and study of the ethmoid area in thirteen babies under one year of age. Eight cases revealed the pathological bone and tissue changes of chronic suppurative ethmoiditis. It becomes selfevident that, in children, "snuffles" and its attendant "squeaking" and "wheeziness" is more significant than is generally recognized. It explains why many "wheezy" colds in babies and children respond so promptly to adrenalin. They are unrecognized cases of bronchospasm. One is tempted to make the rule that in all cases, babies, children, or adults, where wheezing

is out of proportion to the mucus accumulation in the lung, a therapeutic test should be made with adrenalin to investigate the possibility of bronchospasm. A little later in life the appendix is a frequent offender, and later yet, the teeth, the antra, frontal sinuses and infected fallopian tubes begin to appear, and at about forty the gallbladder and the prostate or seminal vesicles become factors, with increasing frequency.

We have learned that where a history of marked constipation exists the quantitative measure of focal infection, which must exist to produce asthma, can be much less than in the cases where constipation is not present.

Checking up has taught us more things. It has shown that there exists a very close relationship between the nasal and extranasal findings. So true is this that a rhinologist who is especially trained in asthma work, after examining the nose and throat, can make a surprisingly accurate estimate of what the internist's findings will aggregate. The converse of this is equally true, for, after a careful history and physical examination, the internist can make a very close estimate of the amount of infection that will be found in the nose. Oftentimes, the internist's scanty findings after careful examination will compel the rhinologist to revamp his estimate of the importance of nasal pathology that at first blush seemed relatively unimportant.

Close observation has revealed that unilateral bronchospasm sometimes appears, or that the spasm is decidedly worse on one side. This can easily be demonstrated. Take a highly toxic asthmatic patient, irritate the ethmoid area with a cotton pledget and listen to the chest to hear the wheezing appear. In a few seconds, it appears on the side corresponding to the ethmoid that was irritated. As the attack develops, both sides appear to be equally involved, but as the spasm diminishes under adrenalin, the wheezing and rales persist longer on the side in which it first appeared. This sign appears quite frequently in highly toxic asthmatics, but will not be noted if the attack is of the sudden explosive type. If additional data were necessary to prove nasal reflex as the mechanism of bronchospasm, this sign alone would almost suffice. Checking-up has taught us that the spasm is always worse in the side that corresponds with the greatest ethmoid pathology.

In more than one case, Dr. Haseltine, realizing that the patient's progress was not in direct ratio to the improvement of the nasal condition, has compelled me to reexamine the case and to my keen humiliation sources of infections previously considered trivial were found to be very important. I, too, at times, realizing that the patient's progress was not in direct ratio to the improvement secured in the general condition, have made the statement that additional nasal work was required and the results have borne me out. You can now readily understand that this relationship between the nasal and extranasal findings is so close that, with each specialist absolutely sure of his own ground, he is in a position to call the turn on the other specialist.

The patient having been examined, an inventory of the findings made, these findings having been checked up with the rhinologist, their relative value approximately estimated, the entire plan of coordinated treatment to fit that particular case having been laid out, the patient then goes to the hospital.

We have stated that there is only one type of asthma, and that is "toxic" asthma; that toxemia is the one factor common to every socalled type of asthma. The internist takes his cue from this and his task is to detoxicate a highly toxic individual. His first move is to begin a course of elimination treatment.

Elimination does not mean a "dose of castor oil and a hot mustard foot bath." It means the intelligent use of carefully gauged, thoroughly coordinated measures, such as will increase the physiological activity of every excretory channel in the body without adding to the toxic overhead, already present.

The human body has four main avenues of elimination: the lungs, the skin, the urinary tract, and the intestinal tract; this being the order of their importance to the human economy.

The lungs represent the most important piece of eliminative mechanism in the body, and their physiological activity is usually stimulated by physical exercises, but the possibility of doing this is automatically ruled out in asthma, as exertion so frequently brings on attacks of bronchospasm. However, increased elimination from the lungs can be induced as a secondary result

by increasing the activity of the three other avenues of elimination.

The skin represents the second most important avenue of elimination from the body and is the most neglected one in the whole practice of medicine. Physiologists tell us that the skin excretes, daily, twice as great a volume as the kidneys, yet physicians so completely forget this fact that asthmatics, while actually under medical treatment, frequently show a dirty, yellow, sallow skin, whose very smell proclaims their toxemia. There are two ways of stimulating the skin function, by exercise and by drugs. Exercise can induce vigorous perspiration, but is automatically ruled out because of the physical exertion required, for the reason previously given. The use of drugs, like pilocarpin or jaborandi, is dangerous, as they add a drug poison to an individual already poisoned with toxemia. If it were only possible to secure vigorous perspiration by means of an agency that would not depress the heart; would not add drug poison to the already poisoned patient; and would not induce any severe secondary reaction, the problem of skin stimulation would be solved. Fortunately, this is possible by the intelligent use of heat. Heat, applied externally, in the form of a dry hot pack, meets every requirement enumerated above. The hot pack has another effect, which we believe is as important, if not more so, than the perspiration it induces. It relieves passive congestion of all the internal viscera. It drains the deep venous circulation and draws the blood into the superficial arterial system. There is no therapeutic measure that will, without any bad reaction, move so large a volume of blood in so short a time as the hot pack. From its very nature, bronchospasm must produce passive congestion of the lungs, which means stagnation of the entire deep circulation in the veins. The hot pack floods the superficial arterial circulation and, hence, automatically unloads the deep venous circulation, and experience would indicate that this is as important as, if not more so than, sweating.

For the past twenty-five years textbook writers have unvaryingly handed down a certain number of drugs, supposedly of value in asthma: ipecac, lobelia, belladonna, hyoscyamus, stramonium, atropine, grindelia, robinia, nitroglycerin, nitrites, etc. It is significant that, therapeutically, the least common denominator running through all of them is venous constriction and arterial dilatation. The hot pack accomplishes this more promptly and more thoroughly than any drug possibly could.

The third most important avenue of elimination from the body is the urinary tract, and this function, too, can be stimulated by the use of drugs, but again, this means the addition of drug poison. The ideal drug to meet the requirements of a toxic patient, would be one that acts promptly, in no way increases the toxic overhead, is nonirritating to the kidneys, and yet is a solvent for all urinary solids. Fortunately, these requirements are all met by the use of ordinary water—water and plenty of it—ten to fifteen glasses a day. Water has a second, but very important, use under this plan of treatment, as it prevents the loss of weight that would result from the daily use of hot packs and hydragogue cathartics.

The intestinal tract is the fourth and the least important of the body's avenues of elimination. In stimulating its function one bears in mind the fact that the liquid element of our body is a universal solvent for all of the toxic products which the body contains, hence intestinal dehydration is equivalent to intestinal detoxication, so the choice of a purge must necessarily rest on a hydragogue cathartic. Cathartics of this class expend most of their action upon the colon. Therefore, a purely cholagog cathartic is added for its action upon the liver, and certain vegetable extracts for the stimulation of the small bowel.

The elimination treatment consists, therefore, in the use of a daily hot pack, daily cathartics, and an increased water intake.

We have worked out a standard unit of elimination per twenty-four hours. Given an adult male, weighing about 185 pounds, this unit would consist in a hot pack for one hour a day, one solid or semi-solid bowel movement, and two or three small liquid ones, and the drinking of twelve to fifteen glasses of water a day.

Elimination treatment, therefore, is not a haphazard, rough and ready, rule of thumb, procedure. I stated that it meant the intelligent use of carefully gauged, thoroughly coordinated measures. Their intelligent use means that they must not be overdone. The careful gauging means that the treatment must be modified to suit the age, the weight and sex of the patient, and then again modified according to that particular patient's reaction day by

day, while receiving it. Being thoroughly coordinated means that the treatment must contain measures which stimulate all the avenues of elimination, yet give special consideration to the excretory channel which in that particular patient needs special attention. Every case receives the elimination treatment for some period of time at first. Later, it is used only when subsequent developments require it.

Care must be exercised not to push the use of cathartics to the point where nausea or intestinal discomfort appears. Whenever this treatment is discontinued, mineral oil is used to tide the patient over until daily intestinal elimination is secured without cathartics or enemas. The relief of constipation in asthmatics is fully as important as any other measure employed.

All patients are put on a full diet. If the patient has in the past been on a restricted diet, all such restrictions are removed, for two reasons: First, the treatment quickly removes food or other forms of sensitization, and, second, the nutrition of our patients has often been impaired by the diet restrictions to which they have been subjected. If skin tests have been made on the patient by some other physician, and the patient can recall the foods to which he was found sensitive, not only is a patient allowed to eat these foods, but we insist on his partaking of them frequently.

We allow all of our asthmatic patients to sleep on feather pillows or feather mattresses as they desire. We do not compel them to give up their trade or vocation, to remove hair-stuffing from the furniture in their homes, or give up their pet cat, dog, pony or canary, and we allow them to use face powder to their heart's content. Neither do we create an artifical environment for the patient while he is in the hospital, but try to make hospital conditions conform as closely as possible to the home conditions.

In determining the order in which the different steps in the treatment of an individual case are undertaken, it is our custom when possible to undertake first that step which is the easiest on the patient, yet unloads enough infection to constitute a distinct gain. For example, in a patient with slight nasal infection, severe tonsil infection and a low-grade appendix infection producing spastic colitis and constipation, we would dispose of the tonsils first, the appendix next and then, perhaps, we would find that nonsurgical measures would prove sufficient for the nasal infection. In a patient with slight nasal infection, badly infected teeth, with antrum infection due thereto, and fibroid tumors of the uterus, the antrum and teeth would be disposed of first and the amount of improvement secured would decide whether or not the nasal infection or the fibroids would be the next step. In some cases, the degree of nasal pathology predominates so completely that it becomes the first and most important avenue of approach, but we always try to dispose of the extranasal factors first because it so frequently enables us to dispense with nasal surgery. The order in which the various steps of treatment are undertaken is always based upon their relative importance in that particular patient, whereever possible disposing of the nasal factor last, not only because it oftentimes renders nasal surgery unnecessary but because this order of steps serves as a check on the importance of the extranasal factors in any given case. Regardless of what extranasal factor is disposed of, the local treatments to the nose are continued daily or at longer intervals unless the nature of the factor being disposed of makes it temporarily impossible. The nasal factor is under constant observation and treatment from the beginning to the end except during a period when we may have allowed an out-of-town patient to return home temporarily to recuperate from some major step.

Every asthmatic patient is hospitalized for at least ten days to two weeks of elimination treatment at the beginning. Whether or not the patient remains longer than this depends upon whether or not the disposal of extranasal factors compel a longer stay. We can usually predict in advance just exactly how much benefit will be derived from any particular procedure which the patient is put through. Our sole gauge for determining the amount of benefit to be derived is the amount of infection that is removed by that procedure.

It can be seen from this that the actual length of time which the patient must remain under active treatment depends upon the number of factors which must be disposed of in his particular case. However, after the active treatment is completed, the patient is required to report for observation at stated periods. Depending upon his condition, he may be told to report once every month, every six months, or once a year. At such times the patient is reexamined to check up the possibility of the

return of any factor which, from its nature, has made permanent correction of it impossible. Should the beginning recurrence of any such factor be detected it is corrected immediately before it has had time to do any serious damage.

Asthmatic patients are all advised that a return of the conditions which originally produced the asthma will again produce it. In certain classes of asthmatics—the very young and the older or more advanced cases—it is imperative that they remain under observation for a considerable time to guard against recurrence.

The principles of treatment laid down in this article enable us to report a series of one hundred and ten cases of bronchial asthma that have had no recurrence of attacks for at least one year after the indicated treatment had been completed. One of these cases has been free for nineteen years, one case for thirteen years, many have been free for over five years and the remainder, two years. In no case where the indicated treatment was carried out, did attacks recur. In cases where the treatment had been only partially carried out the results are in direct proportion. We feel that this record of results proves the validity of the conception upon which the treatment is based.

104 South Michigan Avenue.

Ultraviolet Radiation in General Practice

By A. J. PACINI, M.D., Chicago, Illinois

ULTRAVIOLET radiation, owing to recent investigations on the effect that it produces upon the body in health and in disease, has attained an exceptional therapeutic interest for the general practitioner. Much of this interest is centered around the scientifically demonstrated property that the air-cooled ultraviolet radiation shows in correcting the calcium metabolism of the body. Since many of the uses of ultraviolet radiation, as in the treatment of rickets and other conditions, are fairly well known, only some of the newer successes will be presented here.

Young children cannot grow properly, neither can their bones develop normally, if their bodies are deprived of calcium; and adults show various functional and, at times, pathological disturbances if the calcium metabolism of the body is imbalanced.

Since a variety of conditions seen by the general practitioner are now known to be associated with calcium metabolism imbalance, the proper use of air-cooled ultraviolet radiation affords a pleasant and efficient treatment leading to an immediate improvement and a speedy cure.

Hydrogen-ion Imbalance; Acidosis

The immediate result of calcium deficiency is a change in the hydrogen-ion concentration of the blood leading to the condition of acidosis.

Acidosis occurs easily and frequently in children. It is associated with disturbances of the nervous system and gives rise to a great number of gastrointestinal troubles. In undernourishment and inanition, acidosis is the rule.

Children, therefore, require ultraviolet radiation for a large variety of disorders in which acidosis is present. The treatment is simple, as follows:

Lamp	Air cooled
Volts	70
Distance from tube to skin	40 inches
Initial Exposure	3 minutes
Increment at each successive exposure	1 minute
Frequency of exposure	daily, at first. Later 2 or 3 times a week.

The eyes are protected with suitable goggles and the exposure made first on the front, then on the back of the naked child.

Adults are also prone to show a systemic hyperacidity. Whatever may be the underlying cause, the symptoms of such systemic hyperacidity are those of fever (that is, increased temperature and pulse-rate), restlessness, sleeplessness, gastrointestinal disorder and often nausea and vomiting. Very many times, all of these symptoms are quickly dispelled by the air-cooled ultraviolet radiation, used in this fashion:

Lamp	Air cooled
Volts	70
Distance	40 inches
Initial exposure:	
For blondes	5 minutes
For brunettes	7 minutes

Increment at each subsequent exposure .....2 minutes
Frequency of exposures.....2 to 3 times a week.

It is not necessary to use goggles for the protection of the eyes against ultraviolet conjunctivitis; but, if they are not used, the patient must be warned to keep the eyes tightly closed during the exposure. The exposure is made over the naked front and back of the patient. It is desirable, when there are no indications to the contrary, to furnish also some parathyroid gland and calcium lactate* by mouth.

Air-Cooled Ultraviolet During Pregnancy

It is known that, during pregnancy and the puerperium, there is a diminished amount of calcium in the blood. The mother's depletion of calcium during pregnancy is probably brought about by the growth of the fetus, and immediately after parturition the diminished amount of calcium in the blood is undoubtedly due to its being excreted in the milk. Obviously the need of the body for an extra amount of calcium during pregnancy is unquestionable; and a most elegant therapy that insures the meeting of this demand, without in any way interfering with the mother's general condition, is the use of air-cooled ultraviolet radiation given over the body, front and back (dose, as for acidosis, which see).

Even a slight imbalance in the mother's calcium metabolism is apt to start the fetus on its life handicapped by a calcium deficiency; its bones will grow improperly, its teeth may erupt irregularly and improperly, and, later, the teeth usually decay quickly. Every expectant mother certainly requires a normal calcium metabolism, and in addition to a proper diet rich in calcium, a general course of ultraviolet treatment throughout pregnancy will do much to insure less pathology in the mother and greater calcium sturdiness in the child.

Recently, the wisdom of irradiating the expectant mother with air-cooled ultraviolet radiation has become even more apparent. The withdrawal of calcium from the body may cause a fatty infiltration, and, later, a fatty degeneration, of the liver cells. This, of course, disturbs the function of the liver, and may be instrumental in leading up to an eclampsia. Kehrer has observed the fall of blood calcium in the latter half of pregnancy and obtained abnormally low values of blood calcium in eclampsia. My own experience convinces me that ultraviolet irradiation is responsible for the abatement of tetanic-convulsive symptoms developing in the latter half of pregnancy and that, certainly, would probably have resulted in eclampsia if the radiation had not been used.

Pregnant women do best when ultraviolet radiation is begun early in the term, about the second and not later than the third month. At first the irradiations may be given at intervals of one week, or ten days; later, 2 or 3 times a week; and towards the end of the term, during the eighth or ninth month, the exposures may again be lengthened out to one a week. The factors for the exposure are such as were described above for acidosis.

Ultraviolet Radiation and Calcium Metabolism

Calcium phosphate is probably the most valuable biologic salt in cellular development. Unfortunately, however, the feeding of calcium phosphate as such, is generally not effective. Many conditions showing calcium or phosphorus deficiency could not be helped greatly by the administering of calcium phosphate; but since the advent of scientific ultraviolet therapy, the purposeful assimilation of calcium and of phosphorus has been achieved, and with this the cure of many conditions heretofore difficult to handle is accomplished.

In all conditions associated with calcium or phosphorus deficiency, the air-cooled ultraviolet treatment is simple and satisfactory. Exposures are made over the entire front and then the entire back of the nude body at each treatment. The dose requires the following factors:

Lamp .....Air cooled
Distance from tube to skin....40 inches
Volts 70
Initial exposure:
Blondes .....5 minutes
Brunettes .....7 minutes
Increase at each subsequent exposure .....2 to 3 minutes
Frequency of treatments.....daily, to 3 times a week, according to condition.

Varicose Ulcers

Grove and Vines were probably the first to determine that there exists a relative deficiency of calcium in the serum of those

*Tablets of parathyroid gland and calcium lactate are furnished ready for use by Parker & Wagner, Druggists, 1300 N. Crawford Ave., Chicago, Illinois.

showing varicose ulceration; but my own observation, that varicose ulcer patients, seen early in the pathology of the ulceration, kept at rest and treated systematically with air-cooled ultraviolet radiation, improved rapidly and completely, has been repeated many times by general practitioners and dermatologists everywhere.

In these cases, the patients should be instructed not to continue to walk around promiscuously. A reasonable degree of walking, however, usually relieves the pain and the irritation. At the present time, the best results are obtained with general ultraviolet irradiation. The additional use of calcium lactate and parathyroid gland seems to yield somewhat quicker cures. (The ultraviolet is given as for acidosis in adults, which see.)

Ulcers of the Stomach and Intestine

Benign ulcers of the stomach and the occasional hyperchlorhydria which may accompany them, are benefited symptomatically and morphologically by ultraviolet treatment. The symptomatic relief is prompt and, as this progresses, the x-ray and clinical laboratory findings become normal.

Here, the ultraviolet treatment is general, as for acidosis, and regional.** Immediately following the general treatment, the skin region corresponding to the stomach is also irradiated. The method, then, is this: First, the general irradiation of the body, front and back (see Acidosis); second, immediately following the general irradiation, the area of skin included between the levels of the sternal cartilage and the umbilicus, front and back, receives the following:

Lamp	Air cooled
Volts	70
Distance from tube to skin	40 inches
Time of exposure	3 minutes
Frequency	Whenever the general treatment is given.

Alimentary Toxemia

A frequent diagnosis in intestinal conditions of uncertain etiology has been autointoxication, or toxic absorption from the intestine. Chronic colitis might come in this group and may be treated with success by ultraviolet radiation. Probably the most outstanding example of success in this condition was a case of colitis to which Hutchins*** called me in consultation two years ago. In this apparently moribund patient, air-cooled ultraviolet radiation, together with calcium lactate by mouth proved a therapeutic success.

It has long been inferred, and no one has yet experimentally denied, that neuralgia, neuritis and neurasthenic conditions are sequels to alimentary toxemia and the associated acidosis and calcium deficiency found with it. This may explain the frequent and beneficial reactions in the ultraviolet treatment of these conditions. Again, the lamp used is the air-cooled and the exposure given as for acidosis. It is fitting to recall the many gastrointestinal troubles in babies and in children for which ultraviolet is curative.

Detoxifying Action of Ultraviolet

There is now much laboratory evidence in support of the view that infective disease attacks calcium metabolism, and the variety of conditions in which calcium therapy has been used with success tends to confirm a similar application of ultraviolet treatment.

Frankly suppurative types of infective disease include chronic suppuration of the nasal sinuses, chronic otitis media and the like; whereas infections of a nonsuppurative nature, but toxic, include certain cases of rheumatic arthritis, chronic infectious nephritis, chronic cholecystitis, chronic peptic ulcer and chronic infectious endocarditis. In all of these, general ultraviolet radiation, combined with calcium lactate and parathyroid, does much good.

In some of the acute systemic infections which are etiologically related to focal infection, ultraviolet furnishes an excellent treatment. There may be mentioned acute rheumatic fever, chorea and thyroiditis. Systemic air-cooled ultraviolet, given as for acidosis, is the method of treatment.

For three years, I have been collecting data on cases showing calcium derangement that were treated with air-cooled ultraviolet. A tabular review reveals the following results:

Diagnosis	Cases	Not Improved	Improved	Cured
Acidosis	34	0	6	28
Angioneurotic Edema	9	0	2	7
Antritis	17	2	13	2
Bronchial Asthma	42	2	30	12
Chorea	6	1	5	0
Chronic Cholecystitis	3	0	2	1

**For more complete description of the technic of ultraviolet therapy, see the book, "Outline of Ultraviolet Therapy," by the writer.

***Aetna Life Insurance Company, Rehabilitation Clinic, Syracuse, New York. In charge of C. P. Hutchins, M.D.

Chronic Constipation..	9	0	9	0
Chronic Infectious Nephritis	3	0	2	1
Colitis	28	0	3	25
Cyclic Vomiting	2	0	0	2
Eclampsia, Impending	5	0	0	5
Eczema	35	7	21	7
Ethmoiditis	2	0	1	1
Epilepsy	6	0	6	0
Gastric Hyperacidity..	74	0	5	69
Gastric Ulcer	19	0	8	11
Intestinal Autointoxication	4	0	2	2
Menorrhagia	5	0	5	0
Neurasthenia	28	0	4	24
Neuralgia	6	0	5	1
Neuritis	9	0	3	6
Otitis Media	7	0	7	0
Pityriasis Rosea	5	4	1	0
Pregnancy Vomiting..	13	0	11	2
Rheumatic Arthritis..	16	0	9	7
Rheumatic Fever	2	0	1	1
Sclerodermia	1	0	1	0
Tetany, Infantile	6	0	0	6
Varicose Ulcers	22	5	12	7

Certainly, calcium metabolism has come to be regarded as an important index of bodily well-being. It may become deranged quantitatively or qualitatively. When it is deranged quantitatively, as expressed by a low figure for the total calcium of the blood (normally about 8 or 9 milligrams in 100 cubic centimeters of blood); there is revealed clinically a condition of hyperkinesis with more or less marked convulsive symptoms, as in infantile tetany, chorea, the various tics, epilepsy and spasmophilia. When it is deranged qualitatively, the total amount may be a usual figure (8 or 9 milligrams), but its combination with other substances precludes its use as a biologic salt. Under these conditions, usually a toxic state, a correction of the imbalance leads to recovery.

Since the oral feeding of calcium salts cannot possibly insure the assimilation of the salt, and in fact is most usually ineffective, the use of the air-cooled ultraviolet becomes a great help to the general practitioner, in that it furnishes a safe, pleasant and certain way of correcting calcium metabolism.

As is quickly appreciated by a study of the clinical results obtained in the last three years and tabulated above, many frequently occurring types of pathology, which the general practitioner heretofore had little hope of successfully treating, are benefitted and often cured with air-cooled ultraviolet. It is a reasonably safe practice to give also calcium lactate and parathyroid gland by mouth whenever ultraviolet is used for its effect on calcium metabolism. While this practice is not at all necessary, nor is it at times desirable, in most cases showing no contraindications to the use of parathyroid gland, the results are apparently secured more promptly under the combined treatment of ultraviolet and parathyroid.

Probably no form of treatment lends itself so logically to a wide variety of conditions as does ultraviolet; nor is this difficult to understand when we realize that the body is essentially an accumulation of miniature chemical laboratories that must be presided over by a powerful and chemically active energy. The chemical energy is ultraviolet, normally present in sunshine; but it is more intense, better available and more easily regulated and applied in its air-cooled lamp form.

Interpretation of Acute Abdominal Pain*

By DR. H. STOKES MUNROE, Charlotte, N. C.

IN THE interpretation of acute abdominal pain we are often confronted with a very difficult problem. Cabot in his "Differential Diagnosis" says, "The diagnosis of the causes of abdominal pain is one of the most unsatisfactory, as well as one of the most important, in medicine; unsatisfactory because our methods of examination are so inadequate. The chest, the cranium, and the extremities present far less difficulty, partly because their diseases are more accessible to direct inspection, partly because (in relation to thoracic disease) we have developed the technic of auscultation, percussion, and x-ray examination to a point quite out of the question in dealing with the belly. Our methods of investigating the abdomen are rough and primitive compared to these for the study of the chest."

*Read at the Mecklinburg County Medical Society in 1923.

Nerve Supply of Abdominal Organs

The nervous mechanism of the abdomen and the numerous important viscera contained therein, is very complex. The symptoms are so distorted and variable that

it is nearly impossible in some cases to definitely determine the pathological condition. Mistaken diagnoses are often made. "Exploratory incision" is the blanket to cover our ignorance when we do not know the condition, but feel that the urgency of the case demands surgical intervention. All this is not to be wondered at when we remember there is so little sensation to pain in the abdominal organs. The nervous supply of the abdomen explains, in a way, the difficulties that might arise from painful conditions in this part of the body.

Ramstrom, after careful dissections, could find no sensory nerves supplying any of the abdominal viscera. Lannander, in a paper before the American Medical Association in 1907, reported that, after a series of careful experiments, he had come to the conclusion that "Pains do not originate within the abdominal organs, which are supplied only by sympathetic fibers and the vagus nerves. That all pains originate in the abdominal wall, more especially in the parietal serous membrane and subserous connective-tissue structures, which are innervated by the cerebrospinal nerves. Stretching of the parietal (mesenteric) attachments of the stomach and intestines invaribly elicits pain." Later, Kast and Meltzer showed, by experiments on animals at the Rockefeller Institute, that there is, in the abdominal viscera, some sensibility to pain, unless the animal is slightly narcotized. They claimed that the small amount of cocaine used by Lannander in his experiments, abolished the sensations that really existed.

It is an established fact and known to all surgeons who have had experience with local anesthesia, that there is very little sensation to pain in the abdominal viscera, when they are incised or sutured. Pulling on them always produces pain. So Lannander is probably correct, that sensation is largely, if not wholly, within the parietal peritoneum and it is only when this tissue is pulled upon, rubbed against, or mechanically irritated that actual abdominal pain arises. The parietal sensation is supplied by the lower spinal nerves and anything that excites an irritation in the course of these nerves will also produce abdominal pain. With these facts before us, it is readily conceived how difficult it is to locate the real cause of abdominal distress when pain is the characteristic symptom; it is readily understood how a perforation of the stomach may produce the pain first in the lower part of the abdomen, since the escaped stomach contents may gravitate downward between intestinal coils, which are not sensitive, and not reach the parietal walls to produce pain until they arrive in the lower part of the abdomen. The reverse may be true and leakage of foreign material in the lower abdomen may move upward between intestinal coils and reach the parietal peritoneum under the diaphragm. A neuritis of one of the lower spinal nerves may cause pain in its area of distribution and produce the symptoms of an acute abdominal lesion.

Causes of Abdominal Pain

The usual causes of acute abdominal pain are gastrointestinal disturbances, ptomaine poison, appendicitis, gall-stone colic, renal colic, lead colic, intestinal obstruction from various causes, perforations, ruptured ectopic gestation, torsion of ovarian cysts, acute pancreatis, hepatic engorgement, thrombosis and embolism in mesenteric vessels, gastric crises of locomotor ataxia and Pott's disease, neuritis, diaphragmatic pleurisy, dissecting thoracic aneurysm, and aneurysm of the abdominal aorta.

Undoubtedly, the appendix is the most frequent cause of acute abdominal pain. The syndrome, *general pain*, *nausea* and *vomiting*, *muscular rigidity*, *elevation* of *temperature* and *localized tenderness*, gives us a relatively good picture of acute inflammation of the appendix. This accaccompanied by increased leucocytosis and a negative urine makes a diagnosis as positive as we can have by the means now at our disposal. Unfortunately, this classical sequence of symptoms and signs is not always present. In some cases the nausea and vomiting are absent; in others pain does not localize at McBurney's point, or there is no rigidity. The temperature is sometimes too high or too low for a classical case. All these aberrations of symptoms and signs may make us hesitate until an active peritonitis develops. Gall-stone colic is rather typical, beginning suddenly in the epigastric region with the pain radiating back towards the right shoulder. It is also accompanied by nausea and vomiting. Localized tenderness and elevation of temperature depend upon the degree of inflammation.

The pain of renal colic is usually of a definite type—beginning in the loin and radiating downward toward the groin or testicle on the corresponding side. Oc-

casionally, however, the pain from the kidney is referred and felt in the opposite kidney. The pain of gastrointestinal disturbance is colicky in type, generalized and accompanied by a diarrhea. Intestinal obstruction is characterized by nausea and vomiting, pain and increased intestinal peristalsis; perforation by sudden onset, early abdominal rigidity and shock. Pains referred to the abdomen from the pleura, kidney, spine and aorta and by toxic neuritis are usually suggested by the fact that there is no rigidity, no tenderness and no tendency to localize.

Interpretation of Pain

To properly interpret the cause of pain, a carefully taken history of the patient is one of our greatest aids. The age, the sex, digestive disturbances, former attacks and occupation have a direct bearing on the condition. Previous operations may eliminate or give some clue as to causes. Certain organs may have been removed and others explored. Intestinal obstruction is certainly more probable following some former operation. A patient may be suffering from lead colic, which the occupation will suggest. Previous digestive disturbances of definite type point to ulcer, gallstones, or appendicitis. Age should remind us of intussusception in children under five, and of obstruction from carcinoma in the aged. We should not suspect a ruptured ectopic in an unmarried woman, but we sometimes find it, and it is always a possibility.

A carefully taken history of the acute attack will give most valuable information. A detailed description of how the trouble began, the first symptom complained of, and the exact location of the first pain. Usually the first pain from a ruptured ectopic, salpingitis, or twisted ovary is in the pelvis, although I recall a patient almost exsanguinated from tubal hemorrhage and another with all the signs of peritonitis from a twisted ovarian cyst, who said their first pains were in the epigastrium. The first pain from gall-stones, perforated peptic ulcers and acute pancreatis is in the upper abdomen, but there are exceptions. One of my cases of perforated duodenal ulcer had his first pain in the right iliac region.

Sometimes the origin of pain is in a, so-called, silent area or is so general that the patient cannot give any definite place of origin. Fortunately, the pain may later become localized. Sometimes a general peritonitis will develop without any localization. Again it will locate in some unusual place in the abdomen or it may continue to be general.

A careful physical examination is helpful. This may reveal a pleurisy or pneumonia. It is especially to be looked for in children if a high temperature accompanies the pain. Locomotor ataxia and Pott's disease of the spine will cause abdominal pain. An acute endocarditis may give off a mesenteric embolus, and strangulated hernia may be the cause of an obstruction. Local examination of the abdomen is done by inspection, palpation and percussion. Inspection gives us the position in which the patient lies, his facies, tongue, and general contour of the abdomen. Palpation is most valuable of all. The experienced touch on an abdomen tells much. The feel of resistance, and the location, and extent of tenderness often tell the tale. The exact area of peritoneal involvement may be outlined fairly accurately by palpation alone. Areas of resistance may be felt as well as areas of induration. Percussion elicits areas of dullness, gases, and fluid accumulations.

Laboratory tests should be made in all cases. A complete blood picture is essential. The total leucocyte and differential count estimate the inflammatory reaction, and are most important. Examination of the red cells may show malarial parasites, or serrated red cells which suggest lead colic. A malarial neuritis is sometimes mistaken for appendicitis or gall-stone colic. I recall two cases of my own and numbers of such cases have been reported. Typhoid fever must be considered if there is a leucopenia with temperature. I once removed an appendix from a victim of typhoid fever. Examination of the urine, especially for blood and pus, is of value in eliminating pain of renal origin. I recall, however, two cases who had the typical signs of appendicitis on whom operations were deferred because the urine contained pus. In one of these the x-ray showed a stone in the right kidney. In each, the appendix ruptured and they became drainage cases because of my delay. Such complications are, fortunately, rare. X-ray is most valuable in suspected renal pain. If the pain begins in the right or left side and remains there, an x-ray should always be made and, if necessary, a cystoscopic examination.

Illustrative Cases

With these suggestions in mind, I wish to mention briefly a few cases illustrating the difficulties that are apt to confront us. A girl, six years of age, previously in good health, was taken suddenly ill with acute abdominal pain and diarrhea. This was soon followed by nausea and vomiting, repeated convulsions and cyanosis. Two pediatricians were attending her. About twelve hours after the onset of the symptoms, the patient was still vomiting and having convulsions. There was a distinct tumor about the size of an orange in the pelvis. A diagnosis of intussusception was made and an operation advised. When on the operating table under an anesthetic and everything ready to make the incision, catheterizing the bladder was suggested, for the tumor was in the exact location of the bladder. The mass gradually disappeared when the urine was drained through the catheter. The operation was postponed. About six hours later, the child had another convulsion, became cyanotic and died suddenly. A postmortem was made and no trouble was found in the abdomen; in the chest we found a thymus gland which was very much enlarged. This was a case of acute gastroenteritis which precipitated the symptoms which sometimes arise in childhood from an enlarged thymus.

Another case of unusual interest was a man, farmer by occupation, about fifty years of age, who was suffering with violent abdominal pain throughout the whole abdomen, slightly more marked on his left side. It was of very sudden onset, temperature normal, pulse normal, abdomen flaccid and no local tenderness, urine negative. About twelve hours later he continued to suffer and just two hours before the hour set for him to go to the hospital for x-ray and laboratory study of his case, he died suddenly. A postmortem examination revealed a ruptured aneurysm in the arch of the aorta. This aneurysm had dessected down the abdominal aorta, before rupture, which no doubt explained the abdominal pain. He had no symptoms referrable to his chest and a routine examination of his chest had revealed nothing abnormal.

It is rather unusual that, shortly following this case, we saw another man, age fifty-two, who for some years had high blood pressure but was otherwise in good health. While out hunting, he was stricken with a violent pain in his epigastrium and back. He had to be carried home. His symptoms suggested perforated ulcer or gall-stones, but there was no rigidity and no local tenderness to justify this. The pain persisted but he was complaining mostly of his back. Examination of his chest revealed a very definite area of dullness just above the area of the heart. He too died suddenly at three o'clock in the morning of the day he was to go to the hospital for x-ray of his chest. We failed to get a postmortem but were satisfied he also had a dessecting aneurysm.

Miss C., age thirty-five, had an acute otitis media followed by infected mastoid which was operated on. While convalescing from this, she had abdominal pain which became more and more severe; worse in the left side of her abdomen. This was followed by nausea and vomiting, and passage of some blood when an enema was given. The abdomen became distended and had the characteristic doughy feel of low-grade peritoneal inflammation. The history and character of onset and blood in the stool suggested embolism of a mesenteric vessel. At the operation, we found a gangrenous loop of the bowel extending from the splenic end of the transverse colon to the rectum.

I have on three occasions operated on little girls between the ages of ten and thirteen for acute appendicitis and found to my surprise a twisted ovarian cyst. In two of these a distinct mass could be felt in the right iliac fossa. The blood test, symptoms and signs were suggestive of appendiceal abscess. A fourth case in a child was seen from the beginning of the attack and received a correct preoperative diagnosis.

These are sufficient to illustrate the fact that we often find unexpected things when the abdomen is opened. Sometimes we are disappointed and do not find any lesion at all. It is our duty in the proper interpretation of the socalled "acute abdomen" to carefully consider all the possibilities in the case and make use of all the diagnostic means at our command.

Summary

The interpretation of acute abdominal pain is often difficult. The sensation of the abdomen is largely in the parietal peritoneum and pain is excited by any pull, friction, mechanical or bacterial irritation of this peritoneum. Pain may be *intrinsic*, originating from within the peritoneal cavity; or *extrinsic* and referred to the abdomen from without.

Certain abdominal lesions, as a rule, cause a constant series of symptoms and signs in their relation to pain. Others do not. The past history, detailed description of present attack and thorough physical examination, including laboratory and x-ray findings, are essential for a correct interpretation of acute abdominal pain.

A Group Study of the Use of Bacterial Vaccines

By ALFRED S. BURDICK, M.D., and GEO. B. LAKE, M.D., of Chicago

FINDING that there was a wide variety of opinion among practicing physicians as to the value of bacterial vaccines as remedial agents, and a still greater diversity of views as to the numerous circumstances attending their use, it occurred to us that a questionnaire might be the means of eliciting opinions which, perhaps, by study, might be used in formulating something like a concensus of opinion regarding these remedies.

Following out this idea, a questionnaire was mailed to 200 representative physicians in various parts of the country, and answers which were received from 52 of these form the basis of the following study.

Below are given the questions embodied in the questionnaire, numbered serially, and under each question the replies are tabulated. In some cases, *e. g.*, in question three, a number of the writers made more than one answer, while some did not answer at all.

The Questions and Answers

Q. 1. Do you use bacterial vaccines?
42 replied "Yes," unqualifiedly.
8 replied "Yes," with reservations, as "in selected cases," "at times," "frequently," etc.
2 replied "No."

Q. 2. Do you prefer stock or autogenous vaccines?
30 use stock vaccines.
9 use autogenous vaccines.
11 use both.

Q. 3. Why?
Those who use stock vaccines gave the following reasons:
"More dependable"—3.
"More convenient"—3.
"Just as effective—and cheaper"—16.
"Immediately available. No valuable time lost"—14.
"Stock vaccines more accurately standardized and more carefully prepared"—5.
"Better results with stock vaccines"—3.
"Safer"—1.
"More concentrated"—1.
"The chief effect is nonspecific, in any case"—1.
Several writers did not answer this.

Those who preferred autogenous vaccines gave the following reasons:
"More specific in action"—6.
"Theoretically should be better"—1.
"Better results obtained"—5.

Those who made use of both varieties made the following comments:
"If stock vaccines fail, use autogenous"—8.
"Autogenous, where specific organism can be isolated; otherwise use stock vaccine"—2.
"Autogenous vaccines used only for some rare organism, not carried in stock preparations"—2.
"Stock vaccines for acute cases, to save time; autogenous in chronic conditions"—2.
"Autogenous vaccines for local infections; stock for systemic infections, as arthritis, bronchitis, etc."—1.
"Autogenous preferred, if a reliable preparation can be obtained"—2.

One writer went into interesting detail:

"Stock vaccines are usually preferable to autogenous vaccines, particularly in those diseases, such as boils, carbuncles, etc., which have a definite bacteriology; also in conditions where it is impossible to obtain the organism which is causing the infection, as, for instance, the streptococcus in a case of neuritis or rheumatism. Autogenous vaccines are indicated where unusual organisms are present, as, for instance, in infections caused by pseudodiphtheria bacteria, staphylococcus citreus infections, or other unusual bacteria where proper results

are not obtained from the stock vaccines."

Q. 4. Recognizing that, in some cases, autogenous vaccines are preferable, which stands higher in your favor (for use by general practitioners), autogenic or stock?

Autogenous vaccines given preference by 4.

Stock vaccines given preference by 34.

Both varieties recommended by 13.

The comments under this question have been largely embodied in the tabulation under Question 3, as they covered about the same ground. One answer was so pointed and well-considered, and sums up the matter so well that it is quoted:

"There is no reason why stock vaccines should not be used by a good general practitioner, and there is no reason why most general practitioners, even in the country, cannot nowadays make use of an autogenous vaccine if the case demands. The general practitioner, however, who does not know the difference between one and the other, and is either so uninformed or careless as to confuse vaccines and serums, will get little benefit from either."

Q. 5. When using stock vaccines, do you use a single germ suspension or a mixed, polyvalent vaccine?

Polyvalent mixed vaccines were unqualifiedly preferred by 32.

Those who used sometimes one, sometimes the other, numbered 17.

Single germ suspension, unqualifiedly endorsed by 2.

The comments are well summed up by one of the answers, which we quote:

"Depends on case. If we are dealing with a single strain, as in furunculosis, or a definite streptococcus infection, then I prefer single germ suspension. If we are dealing with a rhinitis or bronchitis, in which the discharge shows no particular predominance I should prefer the mixed vaccine; for instance, in whooping cough I prefer to use a mixture of pneumococcus, streptococcus, staphylococcus with the Bordet bacillus, since complications of bronchitis or pneumonia not infrequently arise due to these organisms."

Q. 6. Do you make a bacteriological diagnosis and use the indicated single bacterin, or do you use the mixed stock bacterins supplied by the biological manufacturers?

Bacteriological diagnosis always made by 3.

Bacteriological diagnosis generally made by 11.

Bacteriological diagnosis sometimes made by 4.

Bacteriological diagnosis not made by 3.

Many replies to this question were indirect and inconclusive. Single bacterins were regularly used by only 2 reporters; the others indicated that, even after a bacteriological diagnosis, they generally used a mixed stock bacterin, containing, as a rule, a preponderance of the organism found.

Q. 7. In what conditions have you found vaccines most helpful?

Acne—1.
Asthma—1.
Bronchitis—2.
Bronchopneumonia—1.
Bronchial and throat infections—1.
Carbuncles—1.
Colon bacillus infections, acute and chronic—1.
Coryza—5.
Cystitis, colon—1.
Cystitis, gonorrheal—1.
Episcleritis—1.
Furunculosis—7.
Erysipelas—1.
Gonorrhea—1.
Influenza—5.
Iritis—1.
Otitis media, acute and chronic—4.
Local infections—1.
"Lung conditions"—1.
Mastoid, acute infection—1.
Pneumonia—2.
Pyelitis—1.
Polyarthritis—1.
Polyarthritis, gonorrheal—1.
"Respiratory infections"—5.
"Rheumatism"—3.
Run-down conditions, with lowered resistance—1.
Sinus infections—5.
Staphylococcus infections—2.
Streptococcus infections—1.
Typhoid—2.

So far as one can judge by the answers to this question, the conditions

are divided into:
Acute conditions—39.
Chronic conditions—20.
Respiratory affections—23.
Nasal sinus and ear conditions—10.
Skin infections—10.
General conditions—4.
Classified as to causative organisms—4.
Other conditions, miscellaneous—8.

Q. 8. What is your opinion of the value of vaccines in acute infections?
Favorable opinions—29.
Unfavorable opinions—12.
Doubtful opinions—6.

Q. 9. Have you seen any harmful effects following the use of vaccines in acute infections?

"Yes"—unqualified	3
"Yes"—with qualifications	6
Total	9
"No"—unqualified	29
"No"—with qualifications	10
Total	39

Comments

From a study of the results of the above questionnaire, several points of interest emerge.

The most obvious fact seems to be that in a great many cases, the physicians' ideas as to the field of usefulness, type of bacterin to be used, and definite results to be expected are much in need of clarification. Some of the reporters were very enthusiastic, and one letter is here reproduced:

"If I had to practice medicine without vaccines, now that I have learned to use them, I would abandon the practice of medicine. The element of fear is the principal reason why some people don't get results. The dosage is too small. And then you must know when to use them subcutaneously or intravenously. In all acute infections I always use them intravenously and cover up the impending reactions with either Dover's powder or morphine.

"In 24 hours the crisis is past. Just as surely as with antitoxin in diphtheria, many commercial vaccines are not reliable. There is no 'kick' to them. They are spoiled in the making or are grown on the wrong media. A vaccine which does not give a specific reaction is worthless.

"We seldom use less than one billion and many times five, even in children. Subcutaneously it takes 48 hours to develop immunity; intravenously, 24 hours; and it is specific if good judgment is used in selecting the proper one to use."

Some were pessimistic; but a large number, having used these products more or less, had no clean-cut opinions one way or the other.

The only method by which this state of things can be remedied is by the collection of a large mass of accurate and carefully checked clinical data. As a matter of course, the large hospitals, clinics and institutions have the greatest facilities for doing this and some of them are doing it, but there remains a large field which must be covered by general practitioners all over the country.

For this purpose, however, only careful, accurate and well kept records are of any value. It is not enough to say: "John Jones had a bad cold; I gave him Blank's 'Cold Vaccine' and he got well." We must have accurate records of time and mode of onset; pulse, temperature and respiration; laboratory findings; physical findings; vaccine employed, with dosage and method and frequency of application; and then accurate and detailed reports of progress from day to day, with figures and, where necessary, charts, fever curves, etc.

Several points, however, appear fairly definite from this study:

1. A large majority of the men who have used bacterial vaccines find them useful.
2. The greater proportion use stock vaccines, largely because they are more readily and promptly available, and because, while just as effective, they are less expensive. The same reasons are given for preferring this type for use by the general practitioner.
3. Sixty-three percent of the users prefer polyvalent vaccines, because they believe that the invading organisms are usually of various types or varieties. Many of the others frequently or occasionally use polyvalent preparations.
4. There is a deplorable infrequency of accurate bacteriological diagnoses.
5. Acute cases were thus treated, in preference to chronic, in 65 percent of cases.
6. Grouping nasal sinus and middle ear affections with those of the respiratory apparatus (where they properly belong), such cases comprised 56 percent of those treated.
7. Bacterial vaccines were considered harmless by 39 out of 48 who reported.

Conclusions

On the basis of this study it seems reasonable to assume that bacterial vaccines are a relatively harmless form of treatment, giving excellent results, and of especial value

in acute conditions and in affections of the respiratory tract; that the polyvalent stock preparations are preferable for use by the general practitioner; that their use would probably be attended by an even greater measure of success if checked by much more frequent bacteriological examinations; and that the whole subject is urgently in need of clarification by the making and publishing of accurate clinical records of cases so treated, not only by the large institutions, but by practicing physicians all over the country.

While we fully realize that so small a number of replies does not permit one to draw any sweeping conclusions, we feel that this study is of sufficient interest to warrant its publication.

Producing a Superior Race

By CASPER L. REDFIELD, Chicago, Illinois

(Second Paper)

ANIMALS are divided into species, genera, families, and so on. They are also divided into higher animals and lower animals. The classification of animals into species and genera is not a natural classification. It is an artificial classification made by man for convenience, and has no real existence in nature. The classification of animals as higher and lower is a real classification of nature which man recognizes in a general way, but which forms no part of his classification into species and genera.

The higher animals are not those with the longer legs. It is common to refer to the higher animals as those which are more complex in their structures, but that is not a good criterion for determining which of two animals is the higher. Man is considered to be the highest animal, but he is far from being the most complex in structure.

The real measure of higher and lower is the capability of the animal to cope with his environment. Man is the highest animal simply because he has the greatest control over his environment, and is least subject to environmental changes. But a dead man is no higher than a dead animal of any other kind. No dead animal has any capability of coping with the environment. Hence it is that the question of higher or lower among animals is determined by the characteristics of the life within the animals, and not by characteristics of structure.

There is a little paleontological history which goes back some millions of years. In those millions of years there were times when everything was favorable for animal life, and there were other times of climatic stress and starvation. When climates were pleasing and food abundant, species and genera multiplied to a great extent, but there was little or nothing in the way of evolution from a lower to a higher stage. When there were great climatic changes; when new land surfaces rose and old ones became submerged, species were reduced in numbers by many of them becoming extinct; but there were notable advances from a lower to a higher stage among those animals which survived.

These general facts show that species-forming and evolution from a lower to a higher stage, are fundamentally different things. Those conditions which are favorable for the production of species are unfavorable for evolution, and those conditions which are favorable for evolution are unfavorable for the production of new species.

The ancestry of a lower animal extends just as far back into the past as does the ancestry of a higher animal. The question of higher or lower does not, therefore, depend upon how long ago the first ancestor appeared on earth. It depends upon which lines of descent rose the more rapidly from lower to higher.

The lower animals are characterized by great fecundity, that is, they produce great numbers of offspring. The cause of the rise from a lower to a higher stage cannot be due to selection. If it was due to selection, then the most fecund animals would be the highest. The lower animals are also characterized by short times from generation to generation; that is, they produce many generations in a given period of time, as a century. For the purpose of considering the relationship of length of time elapsing between generations to evolution, the following table is given:

TABLE IX

Approximate Average Age at Reproduction

Rabbits	1 year
Cattle	4 years
Horses	10 years
Apes	16 years
Digger Indians	21 years
Eskimos	23 years
Polynesians	26 years
Chinese	29 years
The White Race	32 years

The animals in this table are all mammals, and are all active animals. In fact, they are much alike except that they extend over a wide range from low to high in the scale of evolution. Rabbits, which have the shortest time between generations of any of those mentioned in the table, are the lowest in intelligence, and the highest intelligence is found in man, who is characterized by long times between generations. Also, those races which have the greatest length of time between generations are those which are the most intelligent. To make the matter clearer, the main features of Table IX are given in Fig. 5.

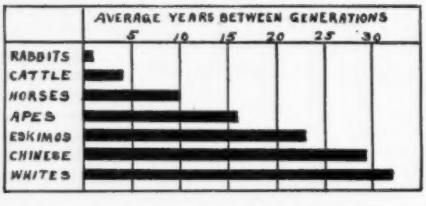

Fig. 5. Relationship of the time between generations of active animals to their advance in the scale of evolution.

In Tables II and IV, and diagrams 1 and 2 (CLIN. MED. for Dec., 1924), I gave details relative to eminent men investigated by different persons. We may go back to that subject and look at the matter from a slightly different angle.

In picking out eminent men, the average degree of high quality of the men in a list will be determined by the care with which they are selected, and by the field from which the choice is made. Five different persons have tabulated the ages of fathers of more or less eminent men, and comparing the average quality of the men in each list with the ages of fathers, found by the investigators, will throw additional light on this subject.

J. McKeen Cattell found the ages of the fathers of 865 American men of science who were living in 1920. If he had selected a smaller number from the American men of science, then the average quality could have been higher. If he had selected from all American men of science, both living and dead, the average quality could have been higher. If he had taken 865 great Americans, and not restricted his list to men of science, he could have had a better average quality. And if he had extended his inquiry to men of other countries—but we need not continue the illustration. He took living American men of science, and found the average age of their fathers to be 34.95 years.

Francis Galton investigated the ages of English men of science. He took only 100 cases, and extended his investigation over the entire English history. As a consequence, he had men of a higher average grade than those in Cattell's list. He found the average age of fathers to be 36 years.

Havelock Ellis investigated the ages of fathers for 299 British men of genius. Things British extend further back than things merely English, and consequently Ellis selected from a larger territory than did Galton. Also, Ellis took the entire field of mental activity. He found the average age of fathers to be 37.1 years.

A. H. Yoder studied 50 eminent men of various nationalities belonging to the eighteenth and nineteenth centuries. He found the ages of fathers in 39 cases. Of these, Ellis says that the average quality of the men in Yoder's list was higher than his (Ellis'), and much higher than Galton's. Yoder found the average age of fathers to be 37.78 years.

I picked the most eminent men I could find in history from Confucius in 600 B. C. down to the beginning of the twentieth century. This field is the largest from which it is possible for anyone to make a selection. From about one thousand of the most eminent men to be found in encyclopedias, I was able to get the ages of fathers in 571 cases. By extending the investigation back to the ages of grandfathers and great-grandfathers, I managed to find 1,028 birth-ranks. This is the only work which carries the investigation beyond the immediate parents. I found the average age of fathers and grandfathers to be 40.70 years.

I tabulated births from New England genealogies to make a standard of comparison. I then checked this standard against 16,385 births recorded in the Dublin Lying-in Hospital; against 16,301 births occurring in Edinburgh and Glasgow; and 100,057 births occurring in Finland and Sweden. The result showed that my standard was high rather than low. Going a little

TABLE X

Average Time Between Generation in the Male Line

Chicago Birth Registration, 1911-1913	31.22 years
New England, Colonial Period	33.83 years
Cattell's American Men of Science	34.95 years
Galton's English Men of Science	36.00 years
Ellis' Men of British Genius	37.10 years
Yoder's Men of 18th and 19th Centuries	37.78 years
Redfield's Great Men of the World	40.70 years

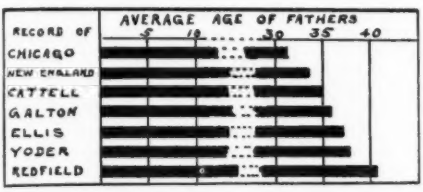

Fig. 6. Relationship of superiority to ages of fathers at the births of their children. Data by various investigators.

further, I tabulated 3,600 births recorded in the Chicago Birth Registration for 1911 and 1913.

It is generally acknowledged that men of great ability have come much more from older parents than from younger ones, and attempts have been made to explain this away on the ground that people of superior stock marry at a late age whereas those of inferior stock marry at an early age. If this argument is sound, then the men in my list, and those in the lists of Ellis and others, must have been principally members of small families, because persons who marry late in life rarely produce anything else than small families. This sends us back to those eminent men to see exactly what kind of families were produced by the parents of these eminent men, and where in those families the eminent sons were located.

In his "Study of British Genius," Havelock Ellis records miscellaneous facts in regard to 1,030 Britons of genius. Among other things, he says he found 403 cases in which he could determine with a "fair degree of certainty" the size of the family in which the genius belonged. He found the average size of genius-producing families to be 6.5 children. He then adds that when he first investigated the matter he found the family size to be 6.96. He explains the reduction from 6.96 to 6.5 as being due "to the large number of persons of comparatively minor ability who have since been added." This means simply that men of very great ability come from very large families, and that men of less ability come from small families.

In 4,390 "Anglo-Saxon" families recorded by Collins, Karl Pearson found the average family size to be 4.52. In English professional classes, Ansell gives the average size as: clergy 5.25, legal 5.18, and medical 4.82. It will thus be seen that, according to Ellis, the men of genius come from large families rather than from small ones, and the larger the family the greater the genius. This means that the later children of a family are superior to the earlier ones.

In 309 cases Ellis determined whether the genius child was eldest, youngest or intermediate, and found that "the eldest and youngest children of ability absolutely outnumber those of intermediate position," in spite of the fact that in families of 6.5 the intermediate children are more than twice as numerous as the eldest and youngest combined. To this Ellis adds the statement that "in the small and medium-sized families, it is the eldest who most frequently achieves fame; in the large families, it is the youngest."

Fame and ability are not the same thing, and do not always go together. Fame is determined by what we observe that a person does, and that in turn is determined by the person's ability and the social conditions which call that ability to our attention. In Britain and elsewhere, there is a law of primogeniture and a custom which corresponds to that law. These give the eldest child a certain strategic position before the public. In small families in which there is only a short period of time between the births of the eldest and youngest children, the strategical advantage of position overbalances the small difference in inherited ability, and the eldest more frequently achieves fame. But, when the families become larger, there is a longer time between the births of eldest and youngest, and consequently a greater difference in inherited ability. Under these conditions, the greater ability of the youngest child overbalances the advantage of position held by the eldest, and the youngest more frequently achieves fame.

Ellis furnishes a table in which he

TABLE XI

Production of Genius. Havelock Ellis

Size of Family	Normal Number	Genius Frequency	Relative Value
1	12.2	6.9	1.000
2	14.7	9.4	1.130
3	15.3	10.6	1.225
4	14.1	9.4	1.179
5	11.1	10.1	1.609
6-7	16.4	19.3	2.081
8-9	10.2	12.4	2.150
10+	5.9	21.5	6.443
	99.9	99.6	

compares normal families with genius-producing families. I reproduce that table in condensed form, and with my calculation in the final column.

This means that in an average population of 999 persons in the British Isles, 122 would each be an only child; 147 would be members of families of two each; 153 would be members of families of three each; and so on. But Ellis found that in only 69 cases among 996 men of genius would the genius be an only child. In only 94 cases would he be one of a family of two; in 106 cases would he be one in a family of three; and so on. The last column shows that if an only child has one chance in a million of being classed as a genius by Ellis, a person in a family of two will have 1.13 chances, a member of a family of ten or more will have 6.443 chances, and members of families of other sizes will have the chances represented. At families of 14 or more, the advantage over the one-child families rises to more than 60 to 1. The last column of Table XI is illustrated in Fig. 7.

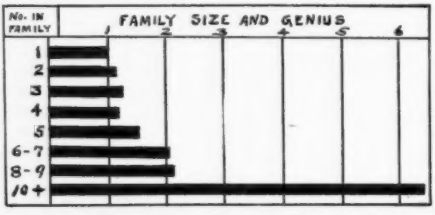

Fig. 7. Relative chances of a child becoming a genius, as measured by the size of the family in which he is born. Data by Havelock Ellis.

It was noted before that Ansell found the families of clergymen were larger than the families of other professional men. Dunlop found the same thing in Scotland, and Hart found it in the United States Census reports. In Table V and Fig. 3, I gave the results of Visher's investigation into the parentage of the men in Who's Who. In doing his work, Visher was so impressed by the prominence of clergymen's sons that he gave a special section of his report to this matter. He sums up his findings in the statement that the "Protestant clergymen, about 1870, contributed in proportion to their numbers * * * over twice as many as the average of other professional men." Other things being equal, the larger the family, the more there is produced of high quality. As the inherited quality of an elder child is not affected by the birth of a later one, the increase in family value is due to the superiority of the later children.

In my work I was looking more at the actual ages of parents (time between generations for the development of powers) in the production of superior ability in children, and less at the sizes of the families in which the ability appeared. To my mind, a man's mental ability is not determined by whether he did or did not have younger or older brothers. Expressing the matter in another way, I have remarked that a man does not get strong muscles because his brother goes into a gymnasium, and I think the same general idea holds with respect to inherited mental ability. Still there is ample evidence in my data to show that the high ages of the parents of the great men of the world cannot be explained on the theory that their fathers delayed marriage until a late age.

There have been a number of families which have produced prominent and even eminent men through three, four or five or more generations in succession. In *Control of Heredity* (1903) I reviewed a number of these, including the Bach family of musicians; the Carpzov family of theologians and philosophers; the Bernouilli family of mathematicians, one member of which is ranked in eminence with Newton and Leibnitz; the Carnot family; the Coligny family; and the Livingston and Dana families in America. In each of these cases I furnished a diagram of the known members of the

families, and those diagrams show that the eminence continues from generation to generation through the later children of families and not through the earlier ones.

The case of Charles Darwin is an example of what I mean. His grandfather, Erasmus Darwin, was the fourth son (not fourth child), and his other grandfather, Josiah Wedgewood, was the thirteenth and youngest child of his parents.

A better example is that of the Lee family of Virginia. The story begins with Richard Lee (1646-1714), who was a younger and probably the youngest son of a "numerous household." He had five sons, the last two of whom became the progenitors of the eminent branches of the family. One of these was Thomas Lee (1690-1750), born when his father was forty-four, and the other was Henry Lee (1691—), born when his father was forty-five.

Like his father, Thomas Lee had five sons, the last three of whom were the eminent members. One of these was Richard Henry Lee (1732-1794), another was Francis Lightfoot Lee (1734-1797), and the last was Arthur Lee (1740-1792). These men all have places in the Encyclopedia Britannica.

From Henry Lee (1691—), the eminent line continues through his youngest son Henry, his grandson "Light Horse Harry," and his youngest great-grandson, General Robert E. Lee.

The Kemble family of actors begins with Roger Kemble, who became the father of eleven children, all more or less famous in theatricals. The famous grandchildren of Roger were Fanny Kemble, and Adelaide, also known as Mrs. Sartoris. Now these famous granddaughters did not come from Roger's first child, or his second child, or his third child, or fourth child. They came from his eleventh and youngest child. And their father was thirty-six and forty-five, respectively, when these granddaughters were born.

If eminent men come from superior stock, and no one disputes that fact, then the fact that eminent men are offspring of the later and not the earlier children of large families is evidence that the later children are the superior stock. Superiority must have its origin somewhere, and the facts presented show where it arises, how it arises, and why it arises.

Supplementary to what has just preceded, I have shown that in the British peerage, where the title and official position are handed down by primogeniture, the eminent men produced in the peerage have not been eldest sons of eldest sons where that means less than thirty years between generations. All of the power of official position and wealth cannot withstand, except in a slight degree, the accumulated effect of the inheritance of acquired characters.

But, let us go alphabetically through a few of the great men of the world and note what kind of families they are found in. When I use the word "child," it implies the whole family up to that point, but the word "son" implies only a part of the family. On the average, the fifth son would be the tenth child.

Alfred the Great, the greatest of British kings, was the fifth and youngest son.

Sir Richard Arkwright, inventor of the spinning frame, was the youngest of thirteen children of parents too poor to give him an education.

Audubon, America's naturalist, was born when his father was 57, and that father was the youngest of 20 children.

Sir Francis Bacon, one of the greatest of British intellects, was the youngest of 8 children.

Lyman Beecher had 8 children by his first wife, of whom Harriet (Mrs. Stowe) and Henry Ward were the seventh and eighth.

Chateaubriand, French author and statesman, and "the most conspicuous figure in French literature during the first Empire," was the youngest of 10 children.

Confucius, the greatest of the Chinese, was the youngest of 11 children, and was born when his father was 71.

Charles Dibdin, "musician, dramatist, novelist, actor and song-writer," was the youngest of 18 children.

Benjamin Franklin was the 15th child and youngest son.

Gainsborough, one of the greatest of English painters, was the youngest of 9 children.

John Hunter, physiologist and surgeon known to all medical men, was the youngest of 10 children.

Thomas Huxley, biologist, was the 7th child of the 7th child. Also, the youngest.

Lamarck, the founder of the evolution theory, was the youngest of 11 children.

Loyola, the founder of the Jesuits, was the youngest of 11 children.

Mendelejeff, the Russian chemist, was the youngest of 17 children.

Mohammed's father was the 10th son.

Shakespeare's mother was the 8th and youngest child.

John Wesley was the 15th child, his brother, Charles Wesley, was the 18th child, and the mother of these founders of Methodism was the youngest of 25 children of Dr. Samuel Annesley.

Havelock Ellis gives a table (the original of my Table XI) which shows that only one person in a thousand in the ordinary population is a member of a family of 15 or more. As families of 15 or more probably average 17, this means that about one person in 17,000 would be the youngest child in a family of 15 or more. What I have given above represents fragmentary information about some of the persons in a list of about 1,000 great men, yet that fragment shows seven persons who were 15th or later children, five of whom are recorded as being the youngest children. If Ellis' table is correct, then those five persons represent as many as should be found by complete information in a list of ordinary people 85 times as long as my list of great men.

Coming back again to Holstein-Friesian cattle, the Blue Book records those animals which pass a high performance test. As only about ten percent of the animals of the breed succeed in passing this test, it will be seen that the animals recorded in the Blue Book are selected animals.

C. L. Allen went to the Blue Book and picked out 1,121 cows. As these were taken in nearly equal numbers from the best and poorest he could find, it is evident that his selection is a fair representation of the animals recorded in the Blue Book. His findings were published in the *Journal of Heredity* for April, 1922. What follows will be an analysis of the data he furnished.

Allen wrote out the pedigrees of those 1,121 animals and found the ages of four dams in each pedigree. This gave the ages of 4,484 female ancestors of these cows. Assuming that a calf born before her dam is 30 months of age is a first calf, and that the cow produces a calf each year, I translated the ages given by Allen into first, second, etc., calves. As this is the basis on which I established a standard for the breed, we can put his record and the standard into a table and see what his facts mean. This is given in Table XII.

TABLE XII

Distribution of Calves in Normal and Blue Book Pedigrees.
Data by C. L. Allen

	Normal Pedigrees	Blue Book	Relative Value
First calves	317	154	48.58
Second calves	193	175	90.67
Third calves	145	150	103.45
Fourth calves	106	148	139.62
Fifth and Sixth	142	190	133.80
Seventh to Ninth	80	133	166.25
Later calves	17	50	294.12
	1000	1000	

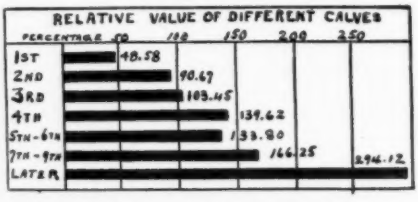

Fig. 8. Relative value of different calves of the same cow, as measured by the Holstein-Friesian Blue Book. Data by C. L. Allen.

This table and Fig. 8 correspond to Table VIII and Fig. 4 given before. The difference between Allen's findings and mine are due partly to the fact that the cows in his selection are not of so high a grade as those of mine, and partly to the fact that his cows were selected on a butterfat basis whereas mine were selected on a milk basis. We both get the same result differing only in degree, and when we consider the difference in qualities of the animals selected, the difference in degree gives the same kind of result for the third time.

PNEUMONIA

General treatment.—The absence of unnecessary movement in order to avoid additional autoinoculation is imperative. Efficient nursing is therefore of primary importance. The patient should be kept at rest in bed, preferably in the supine position, no matter how mild the symptoms may be. Under no circumstances should he be allowed to sit up until the temperature has been normal for some days. As little physical examination of the chest should be made as possible once the diagnosis is clear. When it is necessary to examine the back, the patient should be gently rolled on to his side. He should not be allowed to talk more than is necessary, and in every way his strength should be husbanded.—Arthur Latham, in The Oxford Index of Therapeutics, p. 718.

The Treatment of Chronic Arthritis

By the Parenteral Introduction of Protein Substances *

By W. BUSCH, M.D., Hamburg, and EDWARD AHLSWEDE, M.D., Buffalo

THE parenteral introduction, into the organism, of protein substances, for the purpose of bringing about a general cell stimulation, is of importance mainly for the treatment of chronic diseases. Among the latter, cases of chronic articular affections have recently materially increased in frequency. There is not a practitioner of medicine but well knows these protracted maladies which, often, resist all attempts at treatment. Despite hot-air, baths, and medicinal treatment, in most cases only a transitory improvement or a temporary arrestment of the disease is obtained. It is only the modern protein therapy that has worked a hopeful change in this matter.

Today, chronic arthritis is described as an affection in which the cell layers lining the articulars surfaces are weakened or entirely incapable of funtioning. These cells are constantly exposed to injuries. In addition to traumatic influences, the lasting effects of various toxic products of metabolism must be considered. Although these chronic intoxications act equally upon all cells of the body, it appears that there are certain differences, sometimes considerable, in the sensitiveness of the cells toward the toxic influence. Heilner (5, 6, 7), for instance, assumes a sort of chemical affinity between certain tissues and metabolic toxins. In this manner, the idea of affinity-disease has been created. According to this view, the tissues possess congenitally a certain protective affinity which may be weakened by metabolic toxins, so that the products of metabolism can slowly destroy the unprotected tissues. It is not at all understood, however, how this tissue-protection is to be explained. Heilner assumes a fermentative action of a protein remedy, made according to his directions, and in this he agrees closely with the views of Aman (1).

Aman points out, justly, no doubt, that it is not possible to attribute to each cell the ability to form definitely adjusted antibodies against the effects of certain antigens. Rather, he agrees with Weichardt (2) according to whom the important point is to be found in a general stimulation of the function of the cell protoplasm. According to Aman, an explanation of the specific effect of certain hypothetical antibodies is sufficiently afforded by the secretion of definite chemical substances which exert a regulating action upon metabolism, although these substances, with certain exceptions, are not known. He claims that each tissue cell produces appropriate secretions which probably are mostly of the nature of ferments. It is well known that substances that are indispensable for normal metabolism may produce severe injuries as soon as they are present in excess. We may mention the highly toxic symptoms that may follow upon an excessive production of the thyroid secretion.

Investigations of recent years have established the fact that the ferment is bound to be a protein body which carries it, so to speak, to the organ that is to be influenced. Before becoming active, however, the ferment must be loosened from the protein-"carrier." This loosening of the ferment from the carrier takes place with varying rapidity and the question arises to find methods through which the dissociation may be promoted. Among the means which hasten the dissociation, certain polysaccharides are important. If an albumin solution or simply serum is shaken up with such a polysaccharide, the effectiveness of the serum may be increased materially (1). If, however, the serum or the albumin solution have previously been rendered ineffective ("inactive") by prolonged exposure to warmth, the effect can no longer be produced.

Foreign products act upon animal and human cell-complexes like strong organic toxins. If they are introduced into the body in large amounts, the individual perishes after a short time with symptoms of severe intoxication. Now, it is a fact that every

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poison, or toxin, inorganic as well as organic, acts as a stimulant if given in small, non-toxic doses. For instance, mercury bichloride, in very minute doses, may stimulate the activity of protoplasm. The same is true for strychnine, arsenic, phosphorus, copper, lead, and so forth. The protoplasm-stimulation is essentially the same. It is only close to their toxic doses that these elements or compounds develop their specific action which is injurious usually for certain preferred cell groups. Therefore, there is no essential difference in utilizing organic (e. g. protein) or inorganic chemical substances for the stimulation of protoplasm. Aman explains the symptoms of severe intoxication following injections as a sort of autointoxication of the body through the liberation of enormous quantities of ferments.

However that may be, the fact is established that it is possible to influence the cell protoplasm, generally in the direction of an increased activity. On the other hand, the possibility can not be denied that specifically adjusted antigens may produce even more energetic effects, possibly through the liberation of greater quantities of ferments. The possibility of activating cell protoplasm by means of inorganic compounds, which are toxic in larger doses, is limited. However, so far as is really possible, the compounds have already been used; for instance, injections of arsenic, iodine and mercury.

The reason why these inorganic compounds can not be employed in the same manner as the protein substance is explained, in addition to their greater toxicity, by colloid-chemical considerations. In order to reach the interior of a cell, the ordinary relatively impervious texture of the colloidal structures of the outer plasma layer must be loosened. It is known, however, that many salts have the effect of making colloids more impervious. The freer a protein solution is from these salts, the better it will penetrate the cell structure and exert its action. Pure, salt-free protein solutions act upon colloids by loosening their consistency.

These explanatory remarks may serve as an introduction for some typical case histories showing the manner in which chronic arthritis may be influenced by the parenteral introduction of protein substances.

Mrs. K., severe chronic polyarthritis. Almost all joints of hands, arms, legs and feet are markedly degenerated. One arm is ankylosed, flexed; all muscles of the extremities are atrophied. This form of chronic arthritis is very suitable for treatment with protein substances. Intravenous injections of such a remedy were followed by severe chills, fever up to 106.1° F., great pain in all joints. A change was made to another protein preparation which was injected intramuscularly. This had a somewhat less stormy action but it lasted longer. After eight weeks, the finger joints were loosened so much that the fingers could be moved and could hold objects. While confined absolutely to bed before, the patient now could walk around the room, with assistance. Even the severe ankylosis of the left arm was improved to such an extent that the forearm could be slightly moved with some crepitation.

Pr. B. Chronic rheumatic arthritis. The left shoulder is almost entirely ankylosed. After injections of protein substances, the motility is markedly improved, although some crepitation in the shoulder joint was noted.

F., Chronic rheumatic arthritis. Protein injections together with alpine-sunlight treatments bring about a decided improvement in the stiff joints of hands and fingers.

In general, we prefer the milk protein remedies to others, for the reason that they can be injected into the muscle instead of into the vein, and the effect is seemingly more lasting. We commence with doses of 1 Cc. and increase this up to 5 Cc. Although the doses may be raised to 10 Cc., it is better to stick to the 5 Cc. doses.

It hardly requires special mention that adjuvant methods of treatment, especially the physical ones, are of importance. The reorganization of an organ calls for increased nutrition, that is to say, improved circulation. The protein therapy of chronic arthritis is suitable assisted by means that improve the circulation of the affected joints, such as hyperemia, heat, etc.

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Surgical Seminar

Conducted by GUSTAVUS M. BLECH, M.D.

Personal. The editor of this department extends to the collaborators, to those who have encouraged the department, and to all our readers the best wishes for a year of success and contentment.

Dr. Hamner's Cases.
Solution by Dr. Hamner.

Dr. Hamner expresses gratification at the free discussion of the cases he submitted in the September, 1924, issue. The discussions were published in the November issue.

He notices that quite a few did not associate the previous trouble in the boy's groin with the present—the bladder-trouble. Dr. Hamner took the opposite view. The blood count which revealed a polynuclear count of 92 percent, together with the symptoms and the findings by uranalysis and the absence of bowel phenomena, led him to think that there was some connection with the appendix at the time of the groin trouble and that the appendix may not now be in a normal position. Further, reasoning that the appendix may be in the vicinity of the bladder and that an inflammatory process extended to the bladder, the symptoms were of little importance in a boy of tender age.

Six hours after first seeing the patient, operation was performed and Dr. Hamner removed a ruptured appendix.

In his letter to the editor, Dr. Hamner states that the boy was first attended by a competent surgeon who missed his opportunity to connect the appendix with the groin trouble. He believes the explanation of the case to be somewhat like this: An acute appendicitis subsides; adhesions develop and when another attack supervenes the symptoms appear to be connected with the viscus to which the appendix is adherent, confusing the clinical picture.

Editorial Comment

I feel I cannot allow Dr. Hamner to close the discussion without a few words by way of comment.

The case as presented by Dr. Hamner was accepted for the Seminar for two reasons. First, I am very anxious to have discussions of cases seen by others than the editor, as I would rather fight in the ranks than give tactical instruction, and, secondly, because I concluded that the cases as presented offered interesting material from our seminaristic point of view.

It is well to analyze the presentation of the case and its solution by Dr. Hamner from our seminaristic standpoint.

First, as regards the traumatic etiology of appendicitis. Dr. Hamner is decidedly in error when he reproaches the surgeon who saw the boy when he sustained the trauma to his right groin, six years ago, because he "missed" connecting the appendix with the trauma. I would have "missed" that too, and so would every experienced surgeon who has paid any attention at all to this problem.

The question whether trauma can or cannot produce an acute attack of appendicitis would be of little more than academic interest, were it not for one factor which is often apt to bring our profession into disrepute. I intend to discuss this point at length because, in my opinion, it is a very important one.

To illustrate what I have in mind, let us narrate an experience. A young man is thrown against a shop table while at work; he complains of pain at about the site where he came in contact with the table, say McBurney's point. A few minutes later the pain subsides and the man returns to work.

About four months later he has sharp griping pains in the abdomen, calls in a physician, who immediately demands consultation with a surgeon, who promptly confirms the attending man's diagnosis of acute appendicitis and gives a gloomy prognosis, unless the patient consents to immediate operation. The operation is performed very successfully; that is, the patient makes an uneventful recovery.

A fee is paid, the attending man is satisfied, the surgeon surely is satisfied, the patient, too, feels he has no complaint to make except this: He KNOWS that the injury to his side was the direct cause of the appendicitis, he tells his physicians what he knows and they agree

with him and an attorney is found who demands damages, which the employer refuses to pay, with the result that the case comes up for hearing in an industrial court.

An attorney, a friend of mine, calls on me. He puts a straight question to me: Given a case as above described, is the trauma responsible for the appendicitis? Without hesitation I tell him NO in capital letters. He expostulates. I begin to believe that he represents the employee, and I tell him this: "If the employer has a good attorney and that attorney calls in a real expert, your case will be thrown out of court." Then he tells me that he is the employer's attorney and that he is delighted with my statement, since he felt that his client was without responsibility in the matter. I hate attendance at court, so when he gave me the names of the doctors and they proved to be men I knew through casual meetings, I told the attorney there would be no trial. I spoke to the physicians and it did not take me fifteen minutes to make them seek cover. As I predicted, the two gentlemen simply did not dare go on the stand and the case was *nolle prossed*, or whatever the lawyers call it.

Now, why did I tell you all this? Because the same question has come up again and again, and because in a personal study of nearly two hundred cases of my own, I have been unable to connect trauma with appendicitis. Furthermore, I have gone over the literature involving perhaps a million cases—I say a million advisedly, for there is no prominent surgeon who has not seen a thousand appendicitis cases in the last ten years—and I have yet to find a case which establishes connection between trauma and appendicitis.

Mind, I do not disclaim that trauma can bring about an attack, but that is possible only when appendicitis has existed before. *The appendix is so situated in the abdominal cavity that any trauma not sufficiently violent to rupture the abdominal wall cannot possibly produce inflammation of the appendix.*

To connect the trauma to a boy eight years old, resulting in an abscess too insignificant to require incision, with an acute attack of appendicitis six years later, is, therefore, illogical and certainly inapplicable in any seminaristic exercise or problem.

I narrated the blood study as Dr. Hamner sent it to me. His letter came on December ninth and copy for the January issue must be in the hands of the editor on the tenth—a day later—so no time was left for correspondence with Dr. Hamner, but as the blood count was not given in the original problem as presented, it cannot now be considered and requires no comment, since we were thrown on the available data for a diagnosis. It will be recalled that urinary retention was stressed. Why should an acute appendicitis, even if the appendix be adherent to the bladder, produce retention? Certainly, sphincter spasm can be developed by so many exciting causes that an adjacent, inflamed viscera will seldom if ever seriously affect the bladder proper, except when pus is emptied into the bladder through perforation of the bladder wall. This too is rare and atypical. I have seen, in a very large experience, only one such case and do not intend to publish it in this department just because of its rarity.

While I have commented seminaristically, I again thank Dr. Hamner for his kindness in sending us this interesting material, since it has given us all food for thought. I trust the doctor will favor us again.

Dr. Hamner's Case No. 2

was published and discussed in the same issues as the above case. Dr. Hamner adds in his letter that the case was one of malaria, which illustrates what tricks this malady can play us.

Commenting editorially I pointed out after the close of the discussions that this was a medical case and suggested a malarial basis. I spoke of an incipient Banti's disease to explain the enlarged spleen, and after a few courteous remarks ran away like a coward. I do not pretend to be a clinician nor to conduct a medical seminar, so I am still smiling with the satisfaction that brother Hamner said to himself that I could, at any rate, tell when a case was nonsurgical in character.

Discussions of Obstetrical Problem No. 1

Recapitulation. The following problem was published in the November, 1924, issue. The patient has suffered for some time from mitral stenosis, well compensated. The primipara suffered from weak labor pains for about three hours. Examination reveals a normal pelvis. Urine is normal. The os uteri is dilated to admit an index finger. The bag of waters has not ruptured. Pulse 106, temperature 99°F. Heart shows diminished dullness on percussion, systolic and presystolic murmurs at the apex, which

appears to be displaced to the left. There is a loud, accentuated pulmonary sound.

The requirements called for the measures indicated in delivery and the immediate puerperal complications to be guarded against.

General George Acheson (who has moved to St. Martins, N. B., Canada), says, that it is very difficult to state what one should or should not do in case of labor, unless one is actually present, because conditions change, sometimes with alarming suddenness. To describe in detail all that might happen in the case of the problem and give particulars of treatment would require more space than can be spared. We, therefore, restrict ourselves to a presentation of the guiding principles of treatment during labor and the puerperium.

Marked valvular disease is not infrequently a concomitant of pregnancy, and cardiac abnormality is by no means a bar to a safe gestation and parturition, provided there is good compensation. Nevertheless, the particular lesion, namely mitral stenosis, is one that we cannot lightly disparage, as it is probably the most dangerous form of valvular disease for a pregnant woman.

Here we have a primipara, presumably at full term, with weak pains for the last three hours and an os dilated so as to admit the index finger, membranes not ruptured. Patience and a little delay are indicated. As long as the membranes are intact there is little to worry over, provided contractions are not especially painful and the patient rests comfortably between pains. Of course the bladder and rectum are to be emptied and if the pains die down it may be advisable to induce sleep by the hypodermic administration of H.M.C., which may be followed by more vigorous contractions. At this stage neither ergot nor pituitrin are to be given. If, on the other hand, the patient shows signs of exhaustion before the first stage is completed, means must be adopted to forcibly dilate the os, rupture the membranes and allow the head to engage. If there is still uterine inertia, a hypodermic of pituitrin should be administered and, when the head is sufficiently low, delivery should be completed with forceps.

The following views will probably not meet with approval by some of our colleagues, but I would produce slight anesthesia by chloroform for the forcible dilation of the os and forceps extraction, guarding at the same time against cardiac inhibition by a hypodermic injection of atropin and by extremely careful and slowly administered anesthesia.

After delivery of the fetus and placenta, we must make sure of good uterine contraction and prevent abnormal fall of blood pressure, administering more pituitrin if necessary.

The condition we have to fear is acute paralytic distention of the right ventricle, a condition which has, unfortunately, a suddenly fatal result.

This form of heart failure and post partum hemorrhage are the two complications we must bear in mind, and both are probably best met by the use of pituitrin.

Though I have no personal experience with it, I remind you that it has been suggested to inject adrenalin in normal sterile salt solution into the heart muscle.

I suppose that cardiac thrombosis and pulmonary embolism are possible sequelae of such a case as this. Prolonged rest in bed and general care are indicated during the puerperal period.

The problem is very interesting because there are few other circumstances where a physician's general knowledge, professional judgment, initiative, tact and courage are tried more than in the lying-in room, when two lives depend on another human being's skill, sanity and resourcefulness.

Dr. E. C. Junger, Soldier, Iowa. If this patient happens to be an elderly woman a Caesarean section may be easiest for her heart, but if she is a young woman and the fetus is not abnormally large, light anesthesia (general) or a dose of H.M.C. will facilitate manual dilatation and the early application of forceps in order to cut short labor and save the patient's energy.

Embolism and acute dilatation of the heart are real dangers, while in the presence of poor circulation, infection and subinvolution are conditions to be remembered.

Dr. Lorenzo Chapman, Grand Falls, N. B., Canada, considers that the dangers to be guarded against are, embolism from vegetations on diseased valves and exhaustion from severe, prolonged labor.

In either case, quiet and relief from the dragging pains of the first stage are necessary, and as a general proposition control through the administration of an H.M.C. tablet until dilatation of the os uteri is

practically complete is indicated. Rupture of the membrane is the next step, and if this procedure is not followed by contractions of sufficient strength, pituitrin in small doses should be administered until the desired effect is obtained. When the pains are intense, sufficient chloroform should be administered to make them bearable. Much now depends on the progress. If the advance is not satisfactory, delivery by forceps is positively indicated, but a good deal depends on whether or not there is a disproportion between the advancing head and the pelvic outlet.

Dr. Isaac E. Crack, Hamilton, Ont., Canada, points out that the circumstances surrounding the patient have a great bearing on the procedure to be followed. In a well organized hospital with a capable surgeon, Caesarean section, under gas-oxygen anesthesia, would be the operation of choice, followed by sterilization of the patient. Under less favorable conditions, such as are encountered in country practice, morphine and hyoscine should be administered and the patient watched closely. As soon as dilatation is complete the child should be delivered by forceps or version, ether anesthesia being resorted to when gas-oxygen is not available.

Should the patient's condition become worse during the first stage, dilatation should be completed manually and the child extracted in a rational manner.

The dangers subsequent to delivery are all due to the heart lesion. These may vary from cyanosis and pulmonary edema to sudden death by overdistention of the right heart or by central or pulmonary embolism. Postpartum hemorrhage and infection in the puerperium are dreaded complications in this class of cases.

The generally accepted methods of treatment during the puerperium need not be enumerated here. Certainly every patient afflicted, as is this woman, should be cautioned against future pregnancies.

Editorial Comment

As I have already stated when submitting this problem, I lay no claim to being an obstetrician. All I ever do is to perform an obstetric operation when called in consultation by a medical friend.

Accordingly, I do not pretend to speak with authority, though I am leaning on authoritative teachings, supported by actual clinical experience when I was still a general practitioner.

My sole reason for presenting this problem was to demonstrate by one example how readily this class of problems lends itself to seminaristic discussion. I promise to do no more than present this appetizer, and, if more is wanted, kindly write our new managing editor, who will be glad to hear from any and all of our readers.

Now, I hate to praise unnecessarily but I am a firm believer in the old classic teaching: *Palmam qui meruit ferat,* and so I am compelled again to express my admiration for General Acheson's dignified but critical study. Dr. Chapman, who is a newcomer, seems to apologize for his maiden effort as a contributor, and I say to him that no apology is necessary. Dr. Junger always is highly practical and as for Dr. Crack, he is too well known as a critical author to need further introductions.

By all of which remarks I desire to say that the discussions have not only pleased me but that I am proud to be associated with these contributors, who are really collaborators.

Returning to the problem proper, let me propose this question: supposing you had right in your own family a young woman with a heart affliction as given, would you really plan heroics when she is about to give birth to a child? Here you have a young woman—exact age does not matter—with a well compensated mitral stenosis, with a normal pelvis, even as regards the diverse diameters. The only trouble is the organic heart lesion; but even in such cases it is a good plan to give nature a chance. As long as there is no dyspnea, no danger signal is hoisted and you may look to the future with confidence.

I am afraid of too rapid deliveries. I have seen an eminent surgeon operate for abdominal ascites and kill the patient in a very few seconds, simply because he had incised the peritoneum too rapidly, so that the ascitic fluid escaped suddenly. In my opinion, nothing else than lowered blood pressure was the immediate cause of death. Such collapse is apt to happen when the uterus is emptied too rapidly.

Of course, prolonged labor pains and a protracted first stage may have a damaging influence of the heart. The attending obstetrician must pay strict attention to any condition likely to produce unnecessary delay. I do not intend to teach obstetrics,

but as a reminder I suggest that the infantile head should be in a good position; that the perineum, if rigid, should be stretched in any desired manner, and so forth.

In a condition approaching hydramnios, the patient may suffer from embarrassed breathing. What is more rational than to allow the waters to escape, but this must be done exceedingly slowly and the heart action watched throughout.

Rapid delivery is indicated only when the dyspnea is constantly increasing. I am really afraid of chloroform and would give an opiate hypodermatically and ether by the drop method, the same as I do in all risky surgical cases.

With the delivery of the fetus and placenta, new dangers arise. The lessened pressure in the abdomen and the flooding with blood of the abdominal circulation produces lessened blood supply of the heart, so that the danger of sudden paralysis of the heart is a real one, as brought out in the discussion. The danger of postpartum hemorrhage has been alluded to, but I am convinced that we have in massage, mechanical pressure and ergot suitable means to fight it. Pituitrin is a double edged sword, for this preparation, increasing, as it does, the blood pressure, may favor embolism.

A discussion of the heart in relation to obstetrics; of secondary complications during the puerperal stage, would require many pages. This I did not have in mind. I think we have brought out sufficient to demonstrate the practicalness of seminaristic exercises in obstetrics.

Surgical Problem No. 1 (Series 1925)
Submitted by Dr. H. O. Strosnider, St. Francisville, Mo.

A child was born with a tumor about the size of a small orange on the side of the neck. The growth was soft and cystic to the feel, but in the center were two hard lumps.

The child flourished until it was fifteen months old when it was taken sick with high fever; at the same time the tumor became very sensitive to touch and grew within six days to the size of a child's head.

At the hospital, a surgeon, in the belief that the growth contained pus or lymph, performed aspiration, but as he withdrew no liquid, followed with a deep incision, which revealed a large spongy growth with large cells filled with a dark brown, thick fluid.

The surgeon closed the incision, declaring the growth to be inoperable. The child died six days later.

The blood count showed: white cells 19,400, hemoglobin 50 percent. Differentials: Polynuclear neutrophils 89 percent, eosinophils 1 percent, lymphocytes 6 percent, large mononuclears 5 percent, transitionals 1 percent.

Requirement: Give your diagnosis and reasons for it.

The Ten Commandments of Health

The closing address of the first annual American Education Week Exposition was made on the evening of November 22, 1924, by Dr. Thomas Darlington, former Health Commissioner of New York.

The New York Times for November 23 quotes Dr. Darlington's "Ten Health Commandments" as follows:

1. Keep your mouth closed when breathing, also when angry.

2. Drink cool water with your meals, also between them.

3. Bathe daily, a shower if possible.

4. Eat slowly; this leads to eating sparingly. Make your meal a ceremonial pleasure.

5. Exercise daily and breathe deeply while so doing, but avoid over-exertion and never eat when fatigued.

6. Never read or transact any business while eating.

7. Work ten hours, sleep eight and use the balance for recreation and meals. Always rest on Sunday.

8. Ever keep a contented mind. Equanimity means longevity.

9. Neglect no portion of the body. Employ a physician to examine you at regular intervals and so watch for the beginnings of disease and build up resistance and pay some attention to his opinion and direction.

10. Moderation in all things.

Clinical Notes and Practical Suggestions

Income Tax Information

By M. L. SEIDMAN, C.P.A., New York

INCOME tax returns for 1924 will be filed under a new law that makes many changes over the last law. It will be the purpose of this series of articles, not only to point out and explain these changes, but also to unravel in as simple a manner as possible, the mass of technical language with which the law is worded, so as to assist the layman in the correct preparation of his tax return.

It will be, of course, impossible to discuss the particular problem that may be confronting any one reader. For that reason, in conjunction with the articles, a question and answer column will be maintained, where individual problems submitted to the writer will be answered.

The first question that naturally comes up in the consideration of the income tax, is the determination as to what persons are subject to the tax in the first place. Those who do not come under the law obviously have no incentive to become acquainted with its provisions. On the other hand, those who are subject to the income tax are charged with knowledge of not only every provision in the law, no matter how technical, but also the many regulations, rulings and court decisions that are constantly being issued in the interpretation of the law. It becomes very important, therefore, to determine who are deemed to comprise this latter group.

As a general proposition, it may be concluded that citizens of the United States and persons that reside here, although not citizens, are subject to tax on incomes from all sources, and that non-resident persons are subject to tax on incomes from sources within the United States only.

Partnerships, as such, are not subject to tax, as they are not recognized as an entity distinct from the partners who make up the partnership. The partners, however, would be subject to tax under the rules already outlined.

Estates and trusts, on the other hand, are regarded as separate entities and hence are subject to the income tax.

Another point should be carefully noted. The fact that a person is subject to tax does not necessarily mean that he is required to file a return or to pay a tax. It merely means that such a person comes within the scope of the law. Whether a return must be filed or a tax paid is governed by a different and distinct set of rules. In other words, every one who must file a return would of course be subject to the tax, but it does not follow that every one who is subject to the tax must file a return. Likewise, every one who must pay a tax must file a return, but every one who must file a return must not necessarily pay a tax. These are three separate divisions, although one is contained with another. The broadest division consists of those who are subject to the tax. The next division is of those that have to file returns.

So far as the individual is concerned, the requirements are based upon the size of his income. In the first place, every individual that has a gross income of $5,000 or over must file a return. It should be noted that the requirement is a $5,000 gross income, not net income. It may be that an individual has no net income, or on the other hand, has actually sustained a net loss. Yet if his gross income is $5,000 or over, he must file a return.

By gross income is meant the total income from salaries, professions, businesses, interest, rent, dividends, etc., before considering the deductions allowed by law. The gross income from a business is determined by deducting from the sales, the cost of the goods sold, giving the gross profit. The point to be borne in mind is that it is not the sales that determines gross income from a business, but rather the amount of gross profit.

The rule is also laid down that, irrespective of the amount of the gross income, if the net income of a single person is $1,000 or over, he must file a return. No mention is made about any age limitation so that an infant is required to file a return if he has a net income of his own of $1,000 or over, or a gross income of $5,000 or over. Where the infant is unable to make his own return, it must be filed by his guardian or any other person charged with his care. For practical purpose it can therefore be said that the parent must file the return for a minor child who is unable to file his own return.

So far as a married man is concerned, if his *net* income is $2,500 or over, he must file a return, even though his gross income is less than $5,000. This provision changes the law that prevailed when 1923 returns were filed. Under that law, a return had to be made if the net income of a married individual was $2,000 or over. The difference in the laws is accounted for by the change in the exemption allowed married individuals.

There is another factor to consider about the returns of married persons. The husband and wife have the right to file either separate returns in which their income is stated separately, or joint returns in which their incomes are combined. When it is advisable to file a joint return, and when separate returns, will be made the subject of particular discussion at a later time. However, it is pertinent here to note that the husband and wife, though two distinct individuals, are regarded as one for the purpose of determining whether a return must be filed. In other words, if the combined gross income of the husband and wife is $5,000, a joint or separate return must be filed. The same result is true where their combined net income is $2,500 or over.

This covers the law so far as the returns of individuals are concerned. Now, as to the other taxpayers. Although partnerships, as such, are not subject to tax because they are not regarded as an entity distinct from the partners who make up the partnership, every partnership is required to file a return showing its income and to whom that income is distributable. The partnership return is really in the nature of an information return, and supplies the Government with the basis for auditing the partners' individual returns, with respect to their income from the partnership.

Every corporation (except those that are exempt, such as charitable institutions, etc.) must make a return, regardless of the amount of either the gross or the net income. In other words, all corporations that are subject to the income tax law must file a return, even though they need not in fact pay any tax.

Estates and trusts are regarded somewhat as single individuals and must file a return if their gross income is $5,000 or over, or their net income $1,000 or over.

In addition to these returns there may be other supplementary returns, sometimes called information returns, that have to be filed. For instance, employers are required to file returns showing all the employees to whom they paid $1,000 or over during the year. The requirements as to these, however may best be considered at another time.

Every single person is allowed an exemption of $1,000. That is why a person having a net income of $1,000 or over must file a return.

A married individual is allowed an exemption of $2,500, and that explains why married individuals must file a return if their net income is in excess of $2,500. Under the old law a married individual got a $2,500 exemption if his net income was below $5,000. If above that amount the exemption was $2,000.

The same exemption is allowed the head of a family as is allowed the married individual, namely, $2,500. However, it should be noted that while the head of a family is allowed an exemption of $2,500, he or she must file a return, if the net income is in excess of $1,000. This point is usually overlooked. The general opinion is that if one's net income is less than the personal exemption, a return need not be filed. That is not so in the case of the head of a family.

Furthermore, one individual can not get more than one exemption. A married man who is also the head of the household is entitled to an exemption of $2,500, not $5,000, for that reason.

What is meant by "a head of a family"? A head of a family is an individual who supports and maintains in his household one or more other individuals. Note that the person being supported must live in the same household with the person claiming the exemption. A son who supports his parents, therefore, would be regarded as the head of the household only if he lived with his parents. If he were not living

with his parents, he would not be entitled to an exemption for being head of a household.

The foregoing are known as the personal exemptions. In addition, there is a $400 exemption for each person supported by the taxpayer, if the dependent is under eighteen years of age or is incapable of self-support, because of some mental or physical infirmity.

There are several interesting phases about this exemption. In the first place, a husband cannot claim it for supporting his wife or vice versa. Then, the dependent must be either under the age of eighteen or mentally or physically incapable of self-support. The father that supports his nineteen year old son at college, therefore cannot claim the exemption; nor can the father claim it for the support of his parents, unless they were incapable of supporting themselves because of some mental or physical defect. It should also be observed that the exemption is allowed for each person that is dependent on the taxpayer. If, for example, a taxpayer has three children under the age of eighteen, dependent on him, he would be entitled to exemption on that account, of $1,200.

For the purpose of this exemption, it is not necessary that the dependent person live with the taxpayer, as is the case for the exemption of the head of a household. A man who supports a dependent relative in Europe can claim this exemption. However, as against this is the fact that for a person to be the head of a household, it is not necessary for the dependent to be under 18 or mentally or physically incapable of self-support. As long as the taxpayer supports anyone in his household, he is the head of a family. If that dependent person *is* under eighteen or incapable of self-support, then in addition to the head of the household exemption, the taxpayer is entitled to a further exemption of $400 for each such independent.

There is still another and most important feature about all of these exemptions. Under the old law, it was the situation at the end of the year that determined the amount of the exemption that one was entitled to. If the taxpayer married on December 31, 1923, he was entitled to the married man's exemption for the entire year. If, on the other hand, the dependent died on December 31, the taxpayer could not claim the $400 exemption for such dependent, even though he actually supported the dependent during the entire year.

The 1924 Act, under which 1924 returns are to be filed, changes this somewhat. While the rule so far as the $400 exemption remains the same, namely, that this exemption shall be determined by the situation of the taxpayer on the last day of the year, the exemption for a married person or the head of a household depends on his status throughout the year.

In other words, if a person was married on June 30, 1924, the exemption on his 1924 return would be half the single man's exemption, or $500, and half of the married man's exemption, or $1,250, making a total of $1,750, because he was single half the year and married the other half. If instead of being married on June 30, he was married on any other date, his exemption would be figured on the same basis, namely, the proportion of the year that he was single and the proportion of the year that he was married.

The rules concerning the exemptions that are allowed individuals might therefore be summarized as follows: Every single person is entitled to an exemption of $1,000. Every married person or head of a household is entitled to an exemption of $2,500. An additional exemption of $400 is allowed for each person that is dependent on the taxpayer. The last exemption is determined by the situation that exists at the end of the year. However, the other exemptions are computed on a pro rata basis where the taxpayer's status changes during the year.

The foregoing covers the situation respecting individuals. As to corporations, a corporation is entitled to an exemption of $2,000 if the net income is $25,000 or less; but if its net income is in excess of $25,000 the corporation gets no exemption whatsoever. It will be recalled that irrespective of the size of the net income, all corporations must file a return.

Estates and trusts are regarded as single persons and are therefore entitled to the $1,000 exemption.

Returns prepared on a calendar year basis, as is the case with most returns, must be filed on or before March 15 of the following year. Returns covering the calendar year 1924, therefore, must be filed not later than March 15, 1925.

Now as to where returns must be filed. It is provided in the law that returns must be filed with the Collector of Internal Revenue for the district in which the taxpayer resides, or he may, if he desires, file

the return in the district where he has his principal place of business. The country is divided into sixty-five collection districts, each supervised by a Collector of Internal Revenue, and it is with that officer for the taxpayer's district that the return must be filed. If a person has no legal residence or place of business in the United States, the return must be filed with the Collector at Baltimore, Md.

Let us now consider the tax rates. The net income of an individual may be subject to two taxes: a normal tax and a surtax. The normal tax rates begin at 2 percent for the first $4,000 of income in excess of the exemptions, then go to 4 percent on the next $4,000 of income, and finally 6 percent on the rest of the net income.

Thus, if a married individual, with no dependents, had a net income of $15,500, his normal tax would be computed as follows: The exemption of $2,500 is first deducted, leaving $13,000, subject to the normal tax. On the first $4,000 of this $13,000, a 2 percent tax is imposed, or $80. On the next $4,000, the rate is 4 percent, or $160. On the rest of the income, or $5,000, the rate is 6 percent, or $300, making the entire normal tax $540.

It is interesting to note that the normal tax rates this year are much less than what they were last year. Under the law that then existed, the tax was 4 percent on the first $4,000, in excess of the exemption, and 8 percent on the balance.

Then there is the surtax. The surtax rates range from 1 percent to 40 percent, depending on the size of the income. The lowest rate begins with incomes over $10,000. In other words, where an individual has a net income of less than $10,000, he need not pay any surtax at all. The income between $10,000 and $14,000 is subject to a 10 percent surtax, or $40. The income between $14,000 and $16,000 is subject to a 2 percent surtax; and so on up the line. Income in the $100,000 bracket is subject to 36 percent; $200,000, 38 percent; $300,000, 39 percent; and $500,000 or over, the maximum of 40 percent.

These rates are considerably less than what was imposed last year, when the maximum rate was 50 percent. Last year, the maximum tax rates were 58 percent, 50 percent for surtax, and 8 percent for normal tax. This year the maximum tax rates are 46 percent—40 percent for surtax and 6 percent for normal tax.

The total of the normal tax and the surtax represents the total income tax that is due, except for the special treatment accorded socalled earned income, capital gains and losses, and certain credits that are allowed. These will be explained in detail in subsequent articles.

Estates and trusts being regarded as individuals are subject to tax at the same rates as already outlined. Corporations, however, pay a flat tax of 12½ percent on their net incomes in excess of the exemption.

The difference between the tax rates on individuals and those on corporations immediately brings up the question as to the advisability of carrying on business under the one form or another. An individual does not come into the 12½ percent rate class until his income is about $25,000. If his income is less than that, it is obviously to his advantage to do business as a sole proprietor, because the maximum tax rate would be less than the 12½ percent rate imposed on corporations. However, if his income exceeded $25,000, he would ordinarily be better off doing business as a corporation, since the rate of the corporation tax is 12½ percent. Thus, an individual having a $100,000 income would have to pay a tax of about $23,000 because of the high surtax rates. A corporation, however, making $100,000 pays a tax of only $12,500, resulting in a saving of $10,500, through the corporate form.

There are many other factors to consider, such as salaries, dividends, etc., that need be carefully studied in each particular case. As a general proposition, however, it can be said that where the income is in excess of $25,000, one is better off from a federal income tax standpoint, doing business as a corporation, and where the income is less than that amount, it is best to carry on business as a sole proprietor.

YOU ARE CALLED AS A CONSULTANT

Dr. Paul Jones, of Camden, Alabama, is calling you as a consultant in a very interesting case.

The patient is a girl, 14 years old.

Family history: negative; especially there is no history of syphilis, asthma or hayfever.

Personal history: always healthy; has never had a serious illness. Never had dysmenorrhea, asthma or any nervous symptoms.

History of present illness: after a perfectly normal day the patient ate a few

chestnuts in the evening (this was not unusual, as she frequently ate chestnuts) and, about 8 p. m., she was seized with a violent pain in the epigastrium and a sense of tightness in the chest. The family gave her strong salt water as an emetic, but it did not prove effective. The bowels had moved well during the day.

Status Preseus: when Dr. Jones arrived he found the following conditions: A robust well nourished girl, very pale, with dilated pupils and a cold, clammy skin (almost in collapse) complaining of severe epigastric pain, which did not radiate; inability to get enough air; a sense of a tight band around the body at the level of the diaphragm, with a feeling that death impended.

She was not menstruating. There was no swelling of the lips, tongue or face. Her temperature was not taken; pulse 100, small, thready and irregular; respiration very rapid and spasmodic of the Cheyne-Stokes type; urine negative.

Dr. Jones gave her 1/10 grain of apomorphine, hypodermically, which produced free emesis in 5 minutes. The vomitus contained fragments of chestnuts and much undigested food.

As soon as the emetic had operated freely, the doctor gave ¼ grain of morphine sulphate and 1/100 grain atropine, hypodermically, with copious draughts of sodium bicarbonate solution to wash out the stomach.

Within a short time the severe, colicky pain in the upper abdomen subsided, but the embarassed respiration continued, aggravated by any exertion, and the patient is very nervous.

Every reader is invited to discuss this case, as to the etiology of the attack, diagnosis and the treatment suggested, both immediate and after the subsidence of the acute attack.

Satisfactory discussions will be published in the February number and Dr. Jones and the Editor will comment upon these in the March issue.

ACUTE SURGICAL BELLY—WITH COMPLICATIONS

On March 25, 1924, I was called forty miles over a rough frozen road to see Mrs. C. S., who had been suffering for four days with severe abdominal pain, vomiting and diarrhea. I found her a slender type, physically, age 28, the mother of 3 children and 2½ months pregnant. Physical examination revealed tenderness in the right iliac fossa; moderate rigidity, and a little distension; pulse 90; temperature 99.5. Her features were pinched and she retched persistently while being examined.

A diagnosis of acute, possibly ruptured, appendix was made and a hypodermic of hyoscine-morphine-cactin was given. A straw tick was placed in the tonneau of a car, she was placed thereon on her right side, and the slow, laborious trip back to the office and three-bed hospital was made in about 3½ hours, the patient making the trip without complaint, in a state of semi-narcosis.

Immediate preparations were made for a laparotomy. Instruments were boiled on the kitchen stove and linen sterilized in a small pressure sterilizer.

With a dentist giving the anesthetic, and a practical nurse acting as "assistant," a McBurney incision was made. On entering the peritoneum a quantity of pus was encountered, and in it was the swollen gangrenous appendix, sloughed off from its base, and attached to the cecum by a small shred of mesoappendix.

The appendix was removed as carefully as possible; the abdomen sponged free from pus with the least amount of disturbance; two rubber drainage tubes inserted and the abdomen closed. The patient was placed in bed, in the Fowler position; Murphy drip started; 1/30 grain of strychnine given; and an ice bag placed on the abdomen.

A considerable amount of drainage followed for the next few days, and then gradually subsided. The drainage tubes were removed on the 13th day. On the 15th day patient was sitting up in a chair, and feeling comfortable.

On the evening of the 18th day, while I was attending a confinement case, about 40 miles out in the country, she was taken ill with a sudden tearing pain in the abdomen, at first diffuse then localizing in the neighborhood of the recent incision, which was followed by vomiting and a bowel movement. Vomiting continued until my return the following morning, when I found the abdomen flaccid but great pain present in the region of the old abscess. High colonic flushings were given with no cessation of pain and a slight elevation of pulse and temperature. In a few hours the patient complained of fecal taste in the mouth, and the vomitus assumed a slight yellow color. I was unable to detect the reverse peristaltic wave described in the

texts, but I made a diagnosis of intestinal obstruction, caused by adhesions in the region of the former abscess, and decided to reopen the abdomen immediately.

With a right rectus incision the abdomen was reopened, and a loop of gut was found strangulated in the mass of adhesions at the site of the old abscess and dark in color. The loop was released and held for several minutes in hot wet sponges, when it soon regained its normal color. Its contents were milked past the site of strangulation; the adhesions released and the abdomen closed with a cigarette drain. Murphy drip was started, and no nourishment given by mouth for 24 hours, at the end of which time 2 ounces of broth were given and repeated every 2 hours.

The bowels soon functioned normally and the patient made an uneventful recovery, leaving my crude hospital on the 33rd day.

The only excuse I have for reporting this case is to illustrate the vitality shown by a patient when submitted to the rigors of backwoods surgery and crude conditions.

F. M. CANNON.

Arco, Idaho.

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[This case is very interesting and well reported, as Dr. Cannon has given his treatment in detail, with results. It would be interesting to know whether the patient was able to carry her 2½ month fetus to term.

Cases like this should bolster up the courage of those who feel that there is no help for the surgical patient who is denied the most modern hospital facilities, by showing them that, while nothing *which is available* is too good for the patient who is seriously ill, the conscientious, courageous, resourceful and *well trained* general practitioner can cope with almost any situation—with the help of God and the *vis medicatrix naturae*.—ED.]

WORDS OF ENCOURAGEMENT

If the sample copy of CLINICAL MEDICINE furnishes an index of what a subscriber may expect in each issue, he has a fair chance of getting value received from a single copy.

Gentlemen, Gentlemen, do you realize that you are daring to really print "new things" and that the "Gobble-uns'll git you ef you don't watch out?"

W. V. GAGE.

Worland, Wyoming.

[We wish to thank Doctor Gage for his words of friendly encouragement, and will do our best to live up to his good opinion.

We *want* the "new things," and every reader of this journal has something to offer, if we can only persuade them to give us the benefit of their experiences. Make the articles brief but accurate and *give details*.

Any one of you who really *has something to say* will find a chance, here, to *say* it.

If you do not feel that you have time to study the A. M. A. Style Book, send on the *idea* and we'll dress it up for you.—ED.]

COLONIC IRRIGATION

The other day, I had occasion to take a patient for an x-ray examination of the digestive tract. On former occasions, two or three years ago, barium was administered, suspended in malted milk, a pint of the mixture being swallowed with more or less gusto. This last time the patient was instructed to insert a nozzle into the rectum, the barium suspension was injected by gravity and, under the screen, we watched the shadow working up from the sigmoid flexure, outlining the descending, the transverse, the ascending colon and the cecum in succession. It was interesting to see how quickly the colon was filled from the rectum, with the patient lying on the table. All this is an every-day observation and is not very remarkable.

It is barely twenty years ago that I mentioned to a city colleague (I was practicing in the country, then) that I was giving colonic flushes to my patients. I was laughed at and informed that it could not be done. At first, I used a soft, long colon tube; later, I inserted the ordinary rectal nozzle, placing the patient in the knee-chest position. In either event, I succeeded in flushing the colon throughout its entire course.

However, both methods, I was instructed, were equally useless because neither the colon tube nor the water could go above the sigmoid flexure. The fact that I had palpated the tip of the tube through the abdominal wall and that I could outline and percuss the distended colon proved nothing. Neither tube nor water could be gotten above the sigmoid. Therefore, I did not get them there. So said Authority.

Of course, colon flushings have been given now for many years, and nobody thinks of denying the possibility any more. Still, it

is curious to think how this possibility was denied at one time, by Authority, when general practitioners and country doctors the country over had known and employed the method for years. As Bumble used to say of the Law: "*Hauthority is a hass.*"

H. J. ACHARD.

Glendale, Calif.

DR. W. T. THACKERAY

On this page we are showing a picture of Dr. W. T. Thackeray, of Fowlerton, Texas. Doctor Thackeray is now eighty-five years old, and his many friends among the readers of CLINICAL MEDICINE will be glad to know of his excellent health and good spirits.

Doctor Thackeray was a pioneer—perhaps I should say *the* pioneer—in the active principle movement of this country, as those who have read his interesting articles which have appeared from time to time in CLINICAL MEDICINE already know. For a number of years he was associated with Doctor Abbott in The Abbott Alkaloidal Company and The Abbott Laboratories. He gave up this connection to embark in business for himself in Texas. He has had a long, dramatic and happy career. I join with all our friends in wishing him many happy returns on his eighty-fifth birthday.

Chicago. A. S. BURDICK.

"MONEY MAKERS"

In reply to your recent courteous letter inviting further remarks from my pen, on "My Pet Money Makers."

Many things besides a diploma are essential to a successful practice. I might enumerate a number of these but will mention only a few as I find them in my practice.

The first essential is one's partner in the business—his wife. She can either make or break him.

A doctor, to be successful, must have the hearty cooperation of his wife and family. His worries are many. He finds himself often discouraged, cheerless, fatigued physically and mentally, and no greater incentive to continue his efforts can he have, than a few well-chosen words of comfort after and during his day's labors.

A doctor's work is largely mental and if his faculties are depressed by domestic discords he will fail as a money maker. This, I feel is the prime requisite to a successful doctor—that he have the hearty cooperation of his family, the encouragement of a loving wife and sympathetic friendship of his children.

Second, meet your patients, not with a lofty and superior "I know all" attitude, but with a conscious personal magnetism, and a desire to serve them, a free and open countenance, and a willingness to let them do most of the talking. In this way one is almost sure to help the patient.

Third, have an *office*. Many doctors I know have no real office. By that I mean, not a display creating a museum setting, but have an equipment so that when a patient comes to the office he will see that you are fully prepared to give the most modern forms of treatment. This makes a favorable impression and is truly a money maker.

Further, in treating minor cases, a hurry-up system can be, and often is, followed, but a right impression resulting in a freely given extra fee is properly yours if you follow the practice of a more extensive and thorough examination and preparation, even in what appear to be minor conditions.

Again let me emphasize this point: use psychology in treating patients—that is a money maker. The quacks and cults exist by it alone, and why should they have a monopoly?

In my practice I would not do without electricity, not only for its therapeutic

effect, but largely for the psychic. I have a combination electric cabinet giving all forms of high frequency currents such as the Tesla, x-ray, D'Arsonval, fulguration, and diathermy, together with a nose and throat set, sinusoidal apparatus, cautery, etc. I have also a smaller portable set for bedside use.

Almost every variety of disease can be treated, therapeutically and psychically with it—truly my best and highest paying money maker.

Again, do not neglect having a good vibrator. This instrument is one of the best for real therapy in indicated cases, and is a good money maker. Patients even request me not to forget my "electric box" (vibrator) when I call—resulting in an additional fee, of course.

Another little money maker is ophthalmology on a small scale. Ones reputation spreads rapidly, if he does satisfactory work, and that adds to one's income. Only a little time is necessary to refract the eyes and, as a side line, refraction readily finances my annual vacation.

Let me emphasize another point—encourage office practice; it is the best paying proposition. Office practice should not be limited to dispensing a bottle of medicine and some tablets, but should be extended to take advantage of our accessory therapy. There is nothing that appeals more to the lay mind than that which is mysterious, and the best of these is electricity. Also, it works.

Study your patient's mind. Be a psychologist. Encourage and study your chronic cases as they are the ones who will prove most profitable if you can benefit them. Here some form of electric treatment, with your drugs, will hold them, and they will nearly always be satisfied. The neurotic individual must be handled with "kid gloves" but when once you have gained his confidence, be a mental philosopher. It will pay you.

All of us have our little pet prescriptions, but don't write them out if you can help it, because it is poor business to sell your best ideas for a dollar, for the benefit, not only of the patient, but for his friends and the druggist.

In subacute and chronic cases I have come to the conclusion that nearly 75 percent of the ailments are due to autointoxication, whether intestinal, liver, kidney or what not. For this condition I have a pet tablet made in 50 or 100 thousand lots, which I dissolve in a suitable menstruum combined perhaps with one or several other drugs as indicated. This consists of calomel 1/10 gr., podophyllin 1/10 gr., sodium bicarbonate ½ gr., and is given in sufficient dosage to produce adequate elimination over a period of one or several weeks and, combined with electricity, it produces excellent results. I have made "heart pains" disappear miraculously as well as nerve pains, muscle pains, stomach pains and what not. Don't forget that syphilitics tolerate large doses. If no improvement occurs in one week cease the medication, and look further for the cause of the toxemia.

Just one more. We have a hundred and one skin lesions to treat. I relieve many of these by an ointment of sulphur, zinc oxide and phenol in petrolatum. Vary the quantity of the ingredients to suit the case.

C. B. REITZ.

Palmerton, Pa.

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[At our suggestion Dr. Reitz has redeemed his promise, made in the April, 1924, number of CLINICAL MEDICINE, p. 264, to write about his "pet money makers."

The doctor has not laid stress upon this point, but it is well to remember than an office full of apparatus, which *he does not know how to use properly,* may react very unfavorably on a physician's reputation. Get the necessary apparatus for the adequate and modern treatment of your patients, by all means, but *first* get a complete and detailed technical instruction in how it is to be used and what class of cases it will *really benefit.*

"Psychology," too, presents a field of activity in which uninstructed efforts produce little result. Remember, it is a science and a philosophy which has to be *studied,* and not something which naturally oozes out of your pores.—ED.]

MANAGEMENT OF ACUTE RESPIRATORY INFLAMMATIONS

Acute Bronchitis: The treatment, which has given me the best results, is to confine the patient to bed in a warm room with a moist atmosphere, produced by evaporation of water or by any other method that may be at hand.

For the fever I use aconitine (Abbott) gr. 1/800, atropine sulphate gr. 1/500, Codeine gr. 1/34, every half hour until the drug action is manifest; this is alternated

with iodized calcium (calcidin, Abbott), 1/3 gr. in hot water. This treatment will generally abort the disease if commenced immediately after the invasion.

In continued cases: First, the diet should be restricted to nonstimulating food and that in small quantity; drink should also be limited. The bowels should be kept open with a saline laxative, the "dosimetric trinity" (aconitine hydrobromide, gr. 1/800; digitalin, gr. 1/64; strychnine arsenate, gr. 1/128) for the fever as required and the inhalation of steam are the best means of meeting the conditions.

The cough must have attention and this is best met with codeine sulphate, which may be given in 1/6 gr. doses, *pro re nata*.

Should the attack run into a bronchorrhea I have found that the syrupus alii gives the best results in hastening the cure, with calcidin troches (Abbott), as an intermediate.

Pneumonia: An inflammatory condition that often obtains as a result of some other inflammation of the respiratory tract, especially that of the smaller bronchial tubes which transmit their inflamed condition to the parenchyma of the lung by metastasis; or the disease may be primary, from exposure to cold and wet, and ushered in by chill followed by a temperature of from 100° to 105° F. As the disease advances a rusty red sputum appears and it is these symptoms that we are called upon to combat and overcome.

The writer has met these conditions under both favorable and unfavorable circumstances and has had the good fortune to have been successful without reference to the surroundings and regardless of conditions.

One case in particular: Place, on the prairie thirty-five miles from Yankton; shack, a dugout; time, in the early seventies; patient, a man of robust build, suffering from pain in the right lung, temperature 104° F., and a hacking cough with rusty sputum, were the objective symptoms, and the stethoscope confirmed my diagnosis of acute pneumonia. My saddle bags gave only a bottle of Dover's Powder while the shack offered half a gallon of whiskey and a box of ground mustard. These, with a male companion who acted as nurse, completed my weapons.

First: I prepared a large poultice with the mustard and applied it over the lung, then I administered an ounce of whiskey every hour until the fever was reduced to nearly normal, while 5 grain doses of Dover's Powder relieved the cough. I stayed with this patient for twenty-four hours and left with instructions to his friend how to handle the case and, as he had been a close observer of my methods, the patient continued to improve, and two weeks from the date of my visit to him, rode in to Yankton and paid me my fee.

This case I look upon as a piece of good luck or providential interference, as some may claim, but in either case I would do it again under similar circumstances, as I have seen a hard, tense, rapid and full pulse, become soft and less rapid after a dose of an ounce of whiskey, in similar cases to that which I have described.

The classic method in the practice of all practitioners is to commence treatment by thoroughly clearing the *primae vide*, and then attending to the high temperature, which is controlled, by the active principle method, with the defervescent compound (Abbott), consisting of aconitine, veratrine and strychnine, this is administered: a granule or tablet, every fifteen to thirty minutes, according to the gravity of the case, until effect; for the rusty sputum, Atropine sulphate 1/1000 grain every thirty minutes until the condition is changed or physiological action of the drug is noticed, and renewed if required, after the effect of the drug has passed.

The pain is relieved best by the application, over the diseased lung, of a mustard poultice, or any other protective and stimulating application with the purpose of aiding the atropine in drawing away the blood from the inflamed lung to the outer surface of the body.

The cough is amenable to codeine administered as required.

This treatment has proved uniformly successful in my practice during the past thirty years and not unfrequently it has cut the attack short and I recommend it to the profession with fraternal greetings for 1925.

W. T. THACKERAY.

Fowlerton, Tex.

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[Dr. Thackeray has had a long and varied career in the practice of medicine, and his experiences are of interest. The general practitioner of thirty or forty years ago waged many a successful battle against disease with the homeliest of weapons.

We believe that the tide of the best practice is turning away from alcohol in the treatment of pneumonia, though in the

case detailed it, no doubt, helped. We have occasionally seen the happiest results follow a free venesection in sthenic cases of pneumonia.

In this disease, do not forget the results which have followed the use of heroic doses of sodium citrate and fruit juices.

Those who have access to laboratory facilities should always have the infecting organism typed, for prognosis if nothing else, but, if you have a "type I" case, the results of administering the serum are sometimes remarkable.

In the bronchitis cases, the addition of 4 or 8 Cc. of compound tincture of benzoin to the water which is being evaporated in the room will win the gratitude of your patient, as its vapors will assist materially in relieving the cough and the raw feeling in the trachea and bronchi.

Keep the patient in bed until he is well.—ED].

CHLORAZENE, INTERNALLY, IN DYSENTERY

I have never, in the medical literature, seen chlorazene recommended in the treatment of dysentery, so it may be of interest if I give you my experience along this line.

When practicing in New Mexico, in 1922, where each summer produced many cases of dysentery, I started using chlorazene.

The uncoated tablets are not pleasant to take, as I know from experience, but I fully believe they are as specific for dysentery as quinine is for malaria. I give one or two 5-grain tablets (according to the severity of the case) with half a glass of water. The distressing, burning pain in the colon disappears, as a rule, in about thirty minutes. Adult patients with mild cases are often at work before the day is over; more advanced cases require more time and the dose may have to be repeated.

With the exception of a little burning pain in the stomach while the tablet is dissolving, I have never seen any bad effects from giving chlorazene internally.

C. H. WOOLGAR.

Berrien Springs, Mich.

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[Doctor Woolgar's letter opens a very interesting therapeutic field, and his discovery of the value of chlorazene in gastrointestinal disease is none the less original, so far as he is concerned, because it had previously been made by others.

The internal use of chlorazene (or chloramine-T) in acute infections of the bowel, as well as in other conditions, has been carried on for a sufficient period and by a large enough number of clinicians so that its use, in this manner, stands on a sound foundation.

It may be of interest to note here some of the work that has been done along this line.

P. Carnot and Th. Bonduoy, of Paris (CLIN. MED., 1919, v. 26, Feb., p. 111), conclude that chlorazene is nontoxic when given by mouth and a valuable intestinal disinfectant.

Dr. J. W. McCready, of New York *(loc. cit.* p. 759), is convinced, after considerable experience, that chlorazene is a valuable internal remedy in various conditions.

Dr. Reginald Weiler, of New York City (CLIN. MED., 1921, v. 28, Jan., p. 20), recommends the drug highly and gives several case reports, with prescriptions for its use.

Dr. F. W. Waters *(Med. Jour. Australia,* 1918, v. 2, Sept. 7, p. 200) has had excellent results in the treatment of phthisis with chloramine-T.

He gives a teaspoonful of a 2-percent solution every four hours, gradually increasing to doses of 0.3 Gm. every four hours. Best given immediately after food.

Numerous items might be cited, but these are sufficient to indicate that Doctor Woolgar has sound professional backing in the internal use of this valuable drug.—ED.]

LARGEST AND SMALLEST X-RAY TUBES

The largest and smallest commercial Coolidge x-ray tubes are shown in the accompanying illustration. The largest and most powerful is being used in cancer treatment; the smallest is used in the portable x-ray outfit recently developed in the research laboratory of the General Electric Company. The larger is more than 100 times as powerful as the smaller one.

Technical Data Regarding Tubes

The largest commercial Coolidge tube operates at 250,000 volts and 50 milliamperes, with continuous output. The anode is watercooled, and the glass bulb is eight inches in diameter. Operation is in conjunction with a generating outfit consisting essentially of a hightension transformer, rectifying switch, and resistance control. An insulated water system is used in cooling the tube. It was developed primarily

Largest and smallest x-ray tubes.

for cancer treatment, to reduce the time of exposure.

The smallest tube operates at 56,000 volts (maximum) and 10 milliamperes, and is mounted in oil. The bulb, 1½ inches in diameter, is of glass which contains 35 percent, by weight, of lead. The wall thickness is ⅛ inch, and offers protection equal to $^1/_{11}$ inch of sheet lead. The window from which the x-rays emerge is of thin-walled, lead-free, lime glass. The tube is only four inches long. It is so small that, complete with its transformer and all other necessary parts, the outfit weighs about 20 pounds and occupies a box measuring 6½ by 10½ by 8¾ inches.

CANCER IN EARLY LIFE

Cancer is so often associated with adult life that most persons do not know that a considerable number of these deaths occur among children and adolescents; and that, for certain parts of the body, cancer actually occurs almost as frequently in children and adolescents as in adults.

In a study of 90,175 deaths from cancer among Metropolitan Industrial policyholders in a period of twelve years, it was discovered that 1,910 were those of persons under 25 years. The type of malignant growth known as sarcoma was responsible for most of these deaths of young people.

The organs or parts of the body most frequently attacked by malignant growths in early life were the brain, the bones, the kidneys and suprarenals, and the lungs and pleura. One-third of all brain cancers occurred among persons under 25; of bone cancers and those of the kidneys and suprarenals, 25 percent were under 25; and of the lung and pleura, 12 percent.

In the case of brain cancer, particularly, diagnosis based on clinical symptoms is uncertain and the percentage of error is high. It is more than possible, however, that such errors are counterbalancing (or nearly so) and that the cancerous nature of brain lesions is undiscovered in fully as many cases as the cause of death is erroneously certified as due to cancer. One of the foremost among American authorities on cancer, Dr. Francis Carter Wood of the Crocker Institute of Cancer Research, states that malignancy in the brain is often demonstrated on autopsy in instances where it had not been diagnosed clinically; while, on the other hand, lesions which appear, clinically, to be malignant growths, prove on autopsy to be abscesses rather than tumors. These errors of diagnosis, moreover, are as common to one age group as to another and do not in any way invalidate our figures as to the relative frequency of deaths at different periods of life. It is obvious that more autopsies and more diagnoses based on microscopic findings are needed to clear up this subject.

It has been recognized, also, that bone cancers are often associated with anomalies in the growth and development of the bones, which accounts, doubtless, for their frequent occurrence in children.

Tumors of the kidney are divided by specialists into two distinct groups, one of which occurs almost entirely among children. These are complicated tumors which are difficult to classify and may be called, even by experts, either sarcoma or carcinoma. Many of them have to be thrown into a group of tumors arising from congenital remnants as they show elements evidently derived from embryonic kidney structures, embryonic nerve structures, etc. These data offer some explanation of the high prevalence of kidney malignancy among children.

The frequency of cancer of the suprarenal glands in young children, and even in infants, has been recognized by eminent authorities, one of whom states that 34 percent of his cases occurred in infancy and childhood.

Even when all proper reservations are made as to chance for faulty diagnosis, without autopsy or microscopic confirmation, the fact remains that the frequent occurrence of cancer in early life is an important phenomenon, and this is realized by comparatively few laymen.—*Statistical Bulletin*, Oct. 1924.

Medical News

RADIOLOGISTS MEET

The tenth annual meeting of the Radiological Society of North America, was held at Kansas City, Mo., December 8 to 12, 1924, inclusive.

Much time was devoted to the consideration of the part played by x-ray treatment in cancer of various kinds, and careful comparisons were drawn between the results so obtained and those secured by radical surgery. An abstract of a paper by Dr. Montrose T. Burrows, of St. Louis, Mo., Associate Professor of Experimental Surgery, Washington University School of Medicine, dealing with the true nature of cancer, follows:

"The problem that confronts x-ray and radium therapy is the forces active in cancer when it is fully developed. Previous studies have shown that cancer may be induced by any one of a variety of substances and conditions, but these studies have not shown that it, itself, is due to any of these specifically. Cancer, once induced, proceeds independent of these causative agents. Evidence has been found to show that it may be explained as the result of a specific change in the arrangement of the tissue. It is not a disease in the sense of any of the infectious diseases, but belongs in the class with gangrene and atrophy. These various substances and conditions merely act to bring about the establishment of this tissue arrangement. We have analyzed the manner in which coal tar and bacteria produce the cancerous tissue and have thus established facts for ascertaining, in a similar manner, the action of the x-ray and radium."

Another subject which received extended discussion was the role of x-rays in the diagnosis and treatment of pulmonary tuberculosis and other diseases of the lungs and chest. The summing up of a paper on "X-Ray and Clinical Studies of Pulmonary Lesions," by Drs. Max Kahn and Martin F. Sloan, of Baltimore, is of great interest.

The Roentgen ray and clinical study of diseases of the lungs can be divided into three groups:

1. Tuberculous.
2. Nontuberculous.
3. Neoplasms.

1. Incipient tuberculosis is the most difficult of detection and requires the combined skill of the phthisiologist and roentgenologist. Moderately advanced and advanced tuberculosis can be determined, fairly easily, by either, but it is best studied by both, supplemented by a careful history and laboratory findings. In this manner, the extent of the lesion, the presence or absence of cavitation or pneumothoraces and the degree of activity may be determined.

2. Nontuberculous lesions include bronchiectasis, mycotic infections, pneumonia and residual pneumonia, emphysema, foreign bodies, pleurisy with effusion, abscesses of different etiology, bronchiolithiasis, pneumoconiosis and echinococcus cyst. Neoplasms because of their relative frequency and great importance are given a separate subdivision.

3. Neoplasms of the lung are primary and secondary in origin. They consist of sarcoma, carcinoma, dermoid cyst and hypernephroma. Sarcoma of the lung is very rarely primary; metastases are fairly frequent from bone and rarely from the breast. Carcinoma of the lung is rarely primary; it metastasizes, in relative frequency, from the breast, prostate, ovary, etc. Dermoid cyst of the lungs is always primary. Hypernephroma is always metastatic.

THE AMERICAN BOARD OF OTOLARYNGOLOGY

The American Board of Otolaryngology was organized in Chicago on November 10. The following constitute the board of directors: Drs. Harris P. Mosher, Boston, president; Frank R. Spencer, Boulder, Colo., vice-president; Hanau W. Loeb, St. Louis, secretary and treasurer; Thomas E. Carmody, Denver; Joseph C. Beck, Chicago; Thomas H. Halsted, Syracuse, N. Y.; Robert C. Lynch, New Orleans; Burt R. Shurly, Detroit; Ross H. Skillern, Philadelphia; William P. Wherry, Omaha. The office of the Board is at 1402 South Grand Boulevard, St. Louis, Missouri. The board comprises representatives of the five national otolaryngologic associations; the American Otological Society, the American Laryngological Association, the American Laryngological, Rhinological and Otological Society, the American Academy of Ophthalmology and Otolaryngology and the Section of Laryngology, Otology and Rhinology of the American Medical Association. The object of the association is to elevate the standard of otolaryngology, to familiarize the public with its aims and ideals, to protect the public against unqualified practitioners, to receive applications for examination in otolaryngology, to conduct examinations of such applicants, to issue certificates of

qualification in otolaryngology and to perform such duties as will advance the cause of otolaryngology. The first examination will be held at the time of the meeting of the American Medical Association.

MILITARY SURGEONS MEETING

The meeting of the Association of Military Surgeons of the United States, and their foreign guests, was held at San Antonio, Texas, November 13-15, 1924, and without question it was one of the most interesting meetings in its history.

In addition to the scientific papers read, the practical part of the work of the Medical Corps was magnificently illustrated; this was especially true of the Aviation branch of the service. Wonderful precision was shown in bombing at a small target from high altitudes. The target was not more than twenty-five feet square, and yet it was hit by all except one bomb, and that was within two feet of the target.

Capt. Martin Flack, who is the head of the Air Service of Great Britain, was present and gave a most interesting account of the manner of training Air Service Cadets in England.

The French delegates had prepared a set of moving pictures, illustrating their air plane ambulances in action, moving the wounded both by land and sea.

Our own methods of handling the injured were fully shown, both by airplane and by the Medical Regiment at Fort Sam Houston.

The scientific papers and discussions will appear at length in the *Military Surgeon*.

W. T. T.

UNITED STATES CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces the following open competitive examination:

Medical Interne (Psychiatric)

Applications for medical interne (psychiatric) will be rated as received until June 30, 1925. The examination is to fill vacancies in Saint Elizabeth's Hospital, Washington, D. C., at an entrance salary of $1,860 a year.

Applicants must have been graduated from a recognized medical college or be senior students in such an institution, and furnish proof of graduation within eight months from the date of making oath to the application. Applicants must not have been graduated prior to the year 1920 unless they have been continuously engaged in hospital, laboratory, or research work along the lines of neurology or psychiatry since graduation.

Competitors will not be required to report for examination at any place, but will be rated on their general education, technical training, and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D.C., or the secretary of the board of United States civil-service examiners at the post office or customhouse in any city.

BUBONIC PLAGUE IN THE UNITED STATES

The outbreak of bubonic plague in California now seems to be under control, having caused 28 deaths, but danger of further outbreaks along the Pacific Coast will remain until the last of the infected ground squirrels are destroyed.

The ground squirrels, in all probability, became infected by contact with some rat which managed, sometime about 1900, to slip past the rat-guards on a ship from the Orient, and wandered out into the country to die. The infection of the field rodents is not now heavy, but seems to be rather widespread, and for complete safety from further human outbreaks they must be exterminated.

The work of the local and national authorities in dealing with this outbreak has been highly commended by Dr. Wu Lien-teh, the great plague expert of China, who is at present carrying on special research work at Johns Hopkins University.

THE A. M. A. EXECUTIVES

The Board of Trustees of the American Medical Association convened in regular session in Chicago on November 20-21. The Board elected as General Manager of the Association, Dr. Olin West; as Editor of the *Journal A. M. A.*, Dr. Morris Fishbein; as Business Manager, Mr. Will. C. Braun.

The Leisure Hour

Conducted by GEORGE H. CANDLER

Up in the Air

ARE YOU an ether addict? Have you a little wire up on your roof or stretched somewhere about the premises?

Do you know a microfarad when its a low loss; or can you differentiate a grid-leak from a frying noise in your pet tube?

If you can truthfully answer "Aye!" to each of these questions you are on the high road to Fanville if, indeed, you are not already an old residenter in that abode of wandering spirits. Under any circumstances, you are one of us and we will commune together. He who has na wire on his gable, no loop in his miserable domicile, or talking tape sneaked in behind the picture molding may now take his hat and go. This is no place for *him*. "He that hath ears to hear" and doesn't desire to hear every conceivable sound—yea, tho' it come from the uttermost ends of the earth—can no longer hold up his head among the more intelligent of his fellows. And WE are that. *Nicht wahr?*

Among us, we have undoubtedly everything from the humble onetuber—guaranteed to get Yurrup "if atmospheric conditions are favorable"—to the lordly five, six or even eight tube Dynodine of heterogeneous properties and temperamental disposition. The owner of each of these sets, doubtless, firmly believes that he has something unusual. Generally, he *has*. Some of 'em are more than unusual—they are phenomenal. Phenomenal in the fact that they will get Havana or Jericho when no one is around, and utter only wails of horror when the neighbors gather to hear the glad sounds. The onetube man with muffs on has it all over the big-set fellow, because what *he* hears thro' said muffs is his business, while the sounds which emanate from the multituber (nothing to do with potatoes, which have eyes) are—theoretically at least—intelligible to everyone within a distance of from two feet (or less) to three blocks. Now me, I have one of those haughty, loudtalking arrangements, and when it really gets warmed up and interested in what is going on at the other end, my immediate family and visiting friends leave the house. Occasionally, the neighbors, mindful of my affliction, close up their windows, put cotton in their ears and resign themselves to the inevitable in the most Christian manner. Again, sometimes, they don't; they kick. And this leads me up to the point I would like to have you talk to me about, or if you don't feel like conversing on the subject, I'll articulate and you just listen in.

You have a radio. We settled that when we started. That *you* have the last word in apparatus, goes without saying, BUT, aren't you all the time hoping that you can find something a little bit better, something which will give another thousand miles (more or less) and permit you to hear each *nuance* of each instrument or performer on harp or drum, saxophone or accordion? Oh! yes, the accordion *has* nuances, and motifs, and allegrettos, and cadenzas, an' hiccoughs, an' everything, if only you can catch the blamed things. Something, too, which will enable you, if you live in Pittsburgh to cut out KDKA and eat up WQJ of Chicago, or vice versa. I, living in Chicago, right under the shadow of the last named sound distributing agency, would give pretty nearly anything to be able to move away and be at rest. Moreover, no Calumet baking powder ever comes into my distracted household. Things at a distance are wonderful; the identical things under your nose—or in your ears—may become common nuisances. Alas, that 'tis so, but so 'tis!

Therefore, he who liveth far from the great centres and possesseth a really good radio outfit is blessed among men—he "getteth his," diluted by distance, not concentrated by contiguity. Of course, sometimes he doesn't get *much*—and that may be distorted and way-worn, or "faded." The great thing is to possess a collection of condensers, transformers, coils, rheo-

stats, bus-wire, and tubes which will enable you to let in the opera from New York and keep out the lady soprano, who sings "Oh! Promise Me" every Tuesday, Thursday and Saturday night, from the near-by station. If they had their piano tuned now and again, one might perhaps get away with the soprano, and the subsequent report or the onion-seed market. The combination, however, is entirely too much for anyone of delicate sensibilities, and when you just can't cut the station out, what might be a "'appy hevening at 'ome" becomes—well, it *is* that.

Exasperated by such conditions and yearning to hear someone in Frisco (you being in the State "where the Tall Corn Grows," or that vicinity) there is but one thing to do: i. e., secure by fair means or foul, a *real* radio set that will bring 'em in from coast to coast, and cut thro' the most powerful local stations. Nowadays, of course, they *all* do that—in the literature. Alas! nine out of ten of 'em fail to live up to their literary tradition, when wired up in your house. This, of course, is entirely the fault of the *house*. You live in an air-pocket, or have a river, sewer, trunk-line or other disturber of the ether in your immediate vicinity. Now, *I* have flat (pardon, I meant apartment) buildings butting on and adjacent to my 'umble 'ome, and the unfeeling electric light company has deemed it desirable, for the good of the public, to erect a mammoth transformer upon a pole at my back gate. I, therefore, suffer—really undergo *excrootiating* agonies and, yet, I can, sitting in a bath robe with ice-like feet, drag in (sometimes) up to fifty unhappy cities on my loud speaker. Sometimes, it loud-speaks; sometimes, it just talks acceptably, and once in a long, long while, it whispers hoarsely. Maybe, it's a horse *laugh*! Any good horn would laugh at what it transmits now and again. And mine is really a *good* horn. I went "horning" many a day before I acquired title to that reproducer. I listened to sonorous cabinets and porcelain and vitrified paper curiosities; I tried out the table variety and the swan-necked sirens. I went down in my much-tried, right-hand pants pocket and became the proud possessor of every kind of a horn, only to find, alack-aday! that they were all more or less asthmatic and off-key. I blamed the set; I cussed the A battery; I cast suspicious eyes on the B's, and I changed tubes until I ultimately owned a set that I now put away in a cotton bed each night—or morning. Ultimately, I arrived at the conclusion that set, batteries, and tubes were really the best that skill could produce or money procure. That left the aerial and the horn. The aerial was inconveniently located between a chimney and the top of a big oak tree, so the horn came in for most of the personal investigation. What I wanted of my apparatus (and what *you* want) was selectivity, real coast-to-coast range, and the delivery of waves picked up and amplified in a reasonably pleasing form. Not *much* to ask and, of course, as I said before, obtainable (see ads and pamphlets) with nearly any outfit, marketed (with free installation) at from $93.60 to $232.53, the three cents being, presumably, for interest upon money expended for labor while the skilled radiologist slaps up the aerial.

Anyhow, no matter how little you ask, you don't get it; at least, I didn't, and none of my intimate "bug" friends did (or do) either. We found, to our great dismay, that distance-getters were not really musically inclined, and that those ultra-selective, dulcet voiced affairs couldn't get much away from the five-hundred-mile limit. Of course, the experts say that the ordinary tube has at best a limit of fifteen hundred miles. That is a fairy tale, because a most ordinary tube has delivered 2LO and Brussels, and Manchester; backed up, of course, by a standing army of radio and audio frequency amplifiers. But, when you get everything else o. k., where are you if the loud speaker balks and goes "blo-blo-blot," or noises to that effect? In the soup, I would say—distinctly and up to the chin in the bouillon. Therefore, get thee (everything else being *the* thing) a *real* reproducer. Ignore the beautiful illustrations; never give a thought to the decorations, but look up the reproducing mechanism and see to it that the horn thereon is non-vibratile and acoustically correct. So shalt thou come to much gladness.

There *is* such a reproducer, tho' to avoid the taint of advertising, I must not mention its name here; but, if you want one, you can get it. It costs something, it is true, tho' not more than some other alleged loud speakers, which are just that. A mere loud speaker, you see, doesn't bring in the tremolo of a flute, or deliver a canary bird's song unchanged tho' amplified. The real apparatus will do all this and also give you

the Marine Band at Washington so perfectly, that you can *see* the bandmaster's cap!

BUT, here again, remember that no reproducer will give you more than your set conveys to it, and no set, no matter what the hook-up, will give its best unless it is equipped with matched tubes. This only applies, of course, where there are many tubes. Even then you must have an intelligent (or intelligently constructed) aerial. Loops and antennaless contraptions have their good features, but if you are a real "fan," you want far Canadian stations, Phoenix, Denver, San Antonio, Mobile (one very seldom hears it up this way) and—triumph of all triumphs—KPO, KFI and PWX. If you want these badly enough, you need a *real* antenna, even if you have to buy a lot or something to string it up on.

All sets worth the name will get *some* distant stations some of the time, but they hate to perform when they are most desired to behave. Real outfits (as *we*, of course know) behave *most* of the time and, treated kindly, will bring 'em all in with reasonable regularity. I know men who can (they solemnly say so) pick up Havana any old night. More still, will get California if you'll just sit up long enough, and some few (they *are* few, Heaven be praised!) hear the Hoola girls singing on the beaches of fair Honolulu. These are "lulu" birds; they hear in their sleep. We listen to them, sigh wistfully, and go home and bring in Newark, Boston or Fort Worth; it and Dallas being the old reliable DX stations for "fans" in this part of the universe. Pittsburgh (beloved old KDKA) we have, of course, always with us, and atmospheric conditions or no atmosphere at all, you *know* you can always depend upon her. But, occasionally, she rests, and then if WBZ at Springfield fails you, you may have to sorrowfully turn off the switch and explain to curious visitors that its "a bad night for distance," which explanation doesn't satisfy them or you, especially if, after they have left, decided that they will never get a set like *yours*, you turn the dials and get Portland, Oregon, or some little 250-watt station two thousand miles off! That is Heck—or, even worse!

Radio, at its best, however, like a beautiful woman, has its limitations; it fascinates and responds to nearly every reasonable requirement, but you cannot expect too much. Perhaps, the ideal outfit would be a one- or two-tube reflex with crystal detector, for the enjoyment of local music; a five-tube tuned radio frequency (or Neutrodyne) for ordinary ranging, and a real, non-repeating, super-hetrodyne for long range work. Then, with a perfect transformer delivering an even 100 volts, a first class A battery (we can't find a substitute for that part of the equipment yet), matched tubes, and selected reproducer, we should be able to "deliver the goods" at any and all seasons—except, of course, when old man Static has possession of the atmosphere, or some ethereal disorder renders the waves wobbly and anemic. And too often we wot well, they are just that!

The sending stations are not all perfect, but they are, most of them, worthy of our admiration and gratitude; the desideratum now, is improved receptive ability—*and*, if you won't tell a single soul, I will whisper the fact in your ear, that right NOW a few—very few—perfect sets are being constructed. They embody an entirely new idea. They are super-heterodynes without the very obvious drawback of repetition (second harmonics); they will "pull in" surprising distances with ample volume, and they really and truly will absolutely cut out, in two or three points, the loudest and most untiring local. THEY WILL DO IT. Then, to cap the climax, the circuit is so arranged that it is possible to utilize just the detector and one audio frequency tube and get music that is MUSIC, from any one of the local harmony dispensers. If *they* give you discords, of course, you'll get that too. But, you'll know definitely where it originates.

Before you read this, one such set will be working for me, and if it behaves as it is supposed to behave, I'll cheerfully pass on the glad tidings. Meanwhile, if with your present set, you can get "anything from coast to coast" in *acceptable* form, rest happy. Most people can't. Further, don't let anyone monkey with such equipment, even to changing a staple holding your ground wire. If, by any chance, you should be a "muff" man, living out part of your nights with a pair of Baldwins strapped over your sinciput, and even so, get results and happiness thereby, don't change a thing—at least, not until you have leaned back and watched the faces of relatives and friends, as they listen to undistorted melodious reproduction of programs, first from some city really on the Atlantic and

then in half a minute, to the same thing from the slopes of the Pacific. We've *heard* a lot about such reception; we are assured daily that it is ours to command, but, so far, most of us, strive as we would, have had to be contented with a very little at a time—and that, some of the time only. Now the real thing appears to be upon us. And the Corporations missed it! Don't believe for a minute that they will continue to do so. Watch 'em and see!

Unhappily, the relief in sight will be only for those who desire to soar above the "small - compact - beautiful - piece-of-furniture" thing. The necessary equipment will be no larger than some of the cabineted five-tubers, it is true, and can be enclosed as desired, but it will not function on dry cells and does require, for best results, a real reproducer. Go that far and you will find yourself a worse "Ether Addict" than you ever were. And for "Ether Addiction" there is no cure—but, more Ether, and more time to enjoy it.

Anyhow, "Happy New Year"—and better reception!

Signing off now—up in the air again in thirty days! Stand by!

A DOCTOR'S SOLILOQUY ON HIS FIFTY-SIXTH BIRTHDAY

I might have been old and fat and gray,
But I'm not.

Nameless, homeless, a hopeless stray
By the world forgot.

I might have been rich, with a sleek valet,
Petted and spoiled, if I'd had my way;
Or a drunken sot.

But, I'm fit and lean, and toil night and day,
To keep the wolf at bay.

My needs are few—
Something to eat, a drink or two;
A place to lay my head;
Some time for thought.

And then when I'm old and bald and gray,
I'll be content, if my friends say:
"Into our lives he brought some cheer,
Out of our hearts he drove dismay,
Our burdens bore, our paths made clear;
Bright be the closing of his day!"

With such reward, I'll be content,
And deem the hours I've lived well spent!

W. T. Pratt.

TEN DON'TS FOR THE DOCTOR

1. Don't joke when entering a sick-room—the relatives may think you are unsympathetic.

2. Don't send a bill to a very sick patient—it may make him "sicker" and you will lose a case.

3. Don't go away before you prescribe at least one imported medicine.

4. Don't forget to tell them of other doctors' mistakes.

5. Don't forget to say that you practice medicine from altruistic motives alone.

6. Don't forget to admire the baby—if there is one.

7. Don't forget to compliment the mother on her medical sagacity and diagnostic wisdom.

8. Don't forget to tell the people you have cured thousands of such cases.

9. Don't forget to say how busy you are.

10. Don't forget to say you have to see the patient AGAIN.

The Medical Quip.

COUÉ—GONE FLOOIE

Behold in me a chastened man,
My new-cult faith gone flooie!
Held up to shame for muttering
That shibboleth by Coué,
For one day while repeating it
To the very letter;
"Day by day in every way
I am better and better,"
I overheard my caddy say
As I ploughed through the rough,
"Don't kid yourself, you're worse and worse—
Where do you get that stuff?"

Bloodless Phlebotomist.

Current Medical Literature

THE PUBLIC HEALTH SERVICE STUDIES INFLUENZA AND THE COMMON COLD

The common cold is the most prevalent illness in the United States and apparently many such colds are quite contagious, says the Surgeon General of the Public Health Service, few people failing to experience at least one attack during a twelve-month period, while many persons have three or more attacks during that time. These facts are borne out by data recently secured by officers of the Public Health Service in an investigation of influenza and the minor respiratory diseases which they are conducting at the present time.

In a preliminary report of the investigation that is now in progress, the Public Health Service shows that, among a fairly representative group of persons, only 10 percent had no colds, while 90 percent had one or more colds during a five and one-half month period; the rate for the group as a whole for that period being 1.9 cold per person, or an annual rate of 3.7 cold per person should the same rate obtain throughout the year.

It is now believed that there may be a closer correlation between the common cold and influenza than was formerly thought to exist. There seem to be cases of common cold and ordinary influenza which are almost indistinguishable clinically, and the bacteriological findings in the nose and throat of influenza sufferers and persons having a common cold are, as far as the evidence goes, practically the same. As a matter of fact, even in health the bacteria found in the minor respiratory diseases are nearly always present, which at once suggests that good resistance, provided by physical fitness, is an important line of defense, since a lowered vitality and lowered resistance favor infection. We can not depend upon physical fitness alone, however, as robust persons may apparently contract a cold from an infected person.

The investigation now being undertaken by the Public Health Service is the first nation-wide study of influenza and colds ever made, and the final results are awaited with much interest, in the hope that further light will be shed on these affections which yearly cause much suffering, inconvenience, economic loss, and, in the case of influenza, even deaths, and which, as far as their cause and prevention are concerned, are still comparatively little understood.

A NON-SURGICAL TREATMENT FOR CARBUNCLE

Decidedly of interest and deserving the consideration of the average practitioner because of its very simplicity is Morison's treatment for carbuncles, described in the *British Medical Journal* of April 19, 1924.

This treatment consists in using a magnesium sulphate paste, which is prepared by mixing one and a half pounds of dried magnesium sulphate with 11 ounces of pure glycerin. The dried magnesium sulphate is in the form of a fine white powder which contains 12 percent less water than the ordinary commercial Epsom salts. The glycerin is put in a hot mortar and the sulphate added, slowly stirring and mixing with a warm pestle all the time. The result is a thick, white cream, so hygroscopic that if exposed to the air it rapidly absorbs moisture and becomes fluid. It must, therefore, be preserved in a tightly-covered jar.

The paste is spread thickly on a piece of sterile white gauze sufficiently large to cover the whole of the inflamed area. A piece of jaconet is put over the gauze to cover it entirely, and cotton-wool in abundance over and round the part. A profuse discharge of serum takes place, and the dressing is left unchanged for twelve or twenty-four hours and then renewed. Within a few days the central slough separates and a raw granulating surface is left. The relief to the patient after one or two applications is very great. Pain is abated, constitutional disturbances disappear, and sleep comes naturally.

As soon as the slough has separated the crateriform ulcer is dressed with the paste until all signs of sphacelating cellular tissue have disappeared and a healthy granulating surface is seen. The cavity is then packed daily and the undermined edges supported with strips of sterile gauze about 1½ inches wide, wrung loosely out of a satured solution of magnesium sulphate made by dissolving 40 ounces in 30 ounces of boiling

water and 10 ounces of glycerin and sterilizing in an autoclave. The whole area is then covered with a double layer of gauze saturated with the solution, over which a piece of jaconet and then cotton-wool is placed, and fixed loosely by a bandage.

This dressing is renewed daily until the healthy, firm granulation tissue is level with the surrounding skin margins. It can then be covered with Theirsch skin grafts or allowed to epithelialize from the edges if the surface is not too extensive.

Dr. Morison, up to the time of writing, has treated 28 carbuncle cases by his method and has had no deaths.

FOREIGN BODIES IN THE EAR

Dr. O. Jason Dixon, of Kansas City, Mo., reported in the *Journal A. M. A.* for Aug. 2, 1924, a very simple method for removing smooth, hard, foreign bodies from the external auditory canal, when such bodies fill the canal so closely that no instrument can be introduced behind them.

The method was as follows:

A small amount of ordinary dental cement was mixed in the usual manner, and a camel's hair brush, containing a small lump of this fairly thick mixture was held firmly and quietly in contact with the foreign body for 2 or 3 minutes; it was then withdrawn, bringing the intruder with it.

The advantages of using this quick-setting and harmless cement are obvious, particularly when one is working with children or very nervous patients.

THRIFT WEEK

A most conspicious feature of the National Thrift Week report for January, 1924, was the amount of advertising that appeared in newspapers in many cities. Now another Thrift Week approaches—January 17-23, "For Success and Happiness." There will be a new day in this week, "Safe Investment Day." If anyone thinks such a day is not needed, let him consult the National Vigilance Committee. It is in line with the suggestions made by *Printer's Ink* and *Printer's Ink Monthly* in recent Blue-Sky articles. This day comes on Friday, January 23.

The other days of the week will be Saturday, January 17, Benjamin Franklin's birthday, and "Pay Bills Day;" Sunday, "Share with Others Day;" Monday, "Thrift or Bank Day;" Tuesday, "Life Insurance Day;" Wednesday, "Own Your Home Day," and Thursday is "Budget Day."

The Associated Advertising Clubs of the World is one of the forty-four national cooperating organizations. Many local advertising clubs will doubtless participate in the observation of this week, especially in the celebration of the birthday of Benjamin Franklin.

The purpose of this week is to help folks think straight enough about their money matters to earn all they honestly can; spend what they should for the necessities and comforts of life; save consistently for safe investments; and give a proportion for the welfare of society at large.—*Printer's Ink*, Nov. 20, 1924.

PREVENTION OF POSTOPERATIVE PAIN

Dr. H. Stokes Munroe, of Charlotte, N.C., in the October, 1924, number of *Southern Medicine and Surgery*, emphasizes the fact that the best treatment for postoperative pain is to prevent it.

Very much can be accomplished in reducing this undesirable surgical by-product by care, thought and gentleness on the part of the operating-room nurse and the surgeon. The careful arrangement of the padding on the operating table will often minimize the backache which frequently follows long operations, and the surgeon can save his patient much suffering by seeing to it that no nerves are included in his sutures, and that the sutures themselves are not tied too tightly.

Unnecessary trauma of the abdominal viscera by a heavy-handed surgeon is mentioned as a frequent cause of postoperative intraabdominal pain.

Doctor Munroe outlines a method of nerve-blocking with quinine and urea which has met with success in his hands.

ANILINE DYES IN ACUTE INFECTIONS

In the *Medical Journal and Record* for November 5, 1924, Dr. F. McKelvey Bell, of New York, has published a very interesting paper on the intravenous use of neutral acriflavine in acute infections.

He has used the treatment in 92 medical cases with very gratifying results. This series included eight cases of acute bronchitis; four cases of lobar pneumonia; six cases of bronchopneumonia; one severe case of pertussis; six cases of erysipelas; one

case of Ludwig's angina; and numerous cases of carbuncles, mumps, acute arthritis and gonorrhea.

The dose is 50 Cc. of a 0.5-percent solution of the dye for an adult male. This may be repeated in 24 or 48 hours if required. Not more than 4 or 5 doses at 3- to 5-day intervals should be given. Women should be given smaller doses (about 35 Cc.). In children the age, divided by the age plus twelve, gives the correct fraction of the adult dose, and it is given by enteroclysis, and not intravenously. This method may also be used in nervous women or those who are plump and have small, deep-seated veins.

The only contraindications seem to be old age and albuminuria.

The principal complications appear to consist of occasional vomiting and, more rarely, pains in the abdomen or chest.

The results have been very gratifying in almost all cases, and in some cases well-nigh miraculous.

The article ends with a good bibliography.

EARACHE OF EXTRA-AURAL ORIGIN

Earache does not always originate in the ear.

Extra-aural conditions causing earache are discussed by Dr. John A. Glassburg, of New York, in the *Medical Review of Reviews* for October, 1924, who summarizes his discussion as follows:

1.—Many earaches are of extra-aural origin with no pathology within the ear. These cases are best identified by the name of Otalgia.

2.—Dental caries and oral infections are among the most common causes of earaches in children. Consequently, every child presenting an earache should have a thorough examination of the teeth and mouth.

3.—Tonsillar affections and adenoid growths are next in frequency as causes of earache. These structures should always be examined as the possible sources of the ear trouble.

4.—Extra-aural earache may be caused by oral, throat, nasal or general conditions. The most common oral conditions are decayed teeth, glossitis and stomatitis. The most common throat conditions are epiglottitis, laryngitis, tonsillitis, diphtheria, pharyngitis, tonsillectomy, peritonsillar abscess and adenitis. The most common nasal conditions are adenoids, nasal diphtheria, rhinitis, coryza, sinusitis, rhinopharyngitis, adenoidectomy and intranasal operations. The most common general conditions are trifacial neuralgia, acute arthritis of the mandible and hysteria.

ACRIFLAVINE IN SKIN DISEASES

In the October number of this journal (p. 709), we had an interesting paper by Drs. Busch and Ahlswede on the use of Acriflavine in dermatology. In reference to the same subject, a previous contribution by Werner (*Muench. Med. Woch.*, May 29, 1920) is extremely helpful.

At the instigation of the celebrated Prof. Unna, he was led to experiment with the germicide at the Eppendorfer Hospital in Hamburg. The material included children of every age, and women. He limited the external use to painting, first with a watery solution, later with an alcoholic solution. Meanwhile he also used ointments, dusting powder and, in certain cases, gauze dipped in acriflavine solution. The principal field for its use was found in the countless cases of pyodermia sent in for treatment, the increase of which was enormous in Hamburg, as everywhere, due to the war.

Impetigo vulgaris, and all the other forms of impetigo; furunculosis; acne vulgaris; moist eczema and crusty eczema, pruriginous eczema and pediculous eczema; pseudo-scabies; trichophytosis; lichen urticatus and similar dermatoses were experimentally treated with acriflavine. The investigator finally limited its use to pyodermia, impetigo and crusty eczema.

A rather strong concentration was used, although no disagreeable effects were noticed either during treatment or after. The doctor employed a ½-percent to 1-percent solution, used it quite intensively, often painting the whole body, in many cases several times daily. Werner got the impression that the result was particularly good when an intense yellow color showed, and "the canary birds" were paraded in the division. What is particularly praiseworthy about this method of treatment is its simplicity and economy because it almost entirely does away with the use of bandages, an advantage which can not be too highly estimated in times of war and revolution.

It is admitted, however, that where the surface corium was exposed considerable pain was sometimes complained of by the patient. Whether an alcoholic solution of

neutral acriflavine, the newer derivative drug, is less painful, he is not in a position to say. [Editor's Note: It is reasonable to suppose that the non-acid solution of the latter drug would give much less, if indeed any, trouble in such cases.] But it is very pleasing to note that gauze or cotton batting soaked in a solution of acriflavine and used for bandaging does not stick very much and can be removed easily and without causing pain; and the disinfectant properties of acriflavine cause the pus formation to disappear quickly.

His conclusion is that the results obtained unquestionably justify the use of acriflavine or its neutral derivative. In the plurality of cases, healing of the always serious extensive pyodermiæ took place in relatively short time. In order to make comparisons, he treated half the body with an alcoholic solution of acriflavine and the other half with various ointments, such as boracic acid ointment, precipitated mercury ointment, tar ointment, etc. It did not take long to find out that the yellow side healed quicker. An incidental drawback presented itself in the drying up of the skin which necessitated a later application of salves. He says that not in all of the skin cases was a cure effected with acriflavine; but after producing skin formation with the agent, in impetigo pustules, or after the wet spots had dried up in a case of seborrheic eczema of the head, and the secretions and pustulo-formations ceased, the case was carried on to the end with the usual ointment therapy, mostly zinc and sulphur paste.

NONTUBERCULOUS PULMONARY INFECTION

It is to be expected that, in these days, all thoughtful and careful medical men are on the lookout for cases of tuberculosis among their patients showing pulmonary symptoms. Sometimes, however, this highly commendable enthusiasm may lead us astray. Dr. A. H. Gordon of McGill University, Montreal (*Can. Med. Assoc. Jour.*, Sept., 1924), calls attention to the fact that there are other subacute and chronic pulmonary conditions which ofttimes closely simulate tuberculosis. He states that a composite clinical picture of such cases would be something as follows: there develops, following an acute respiratory infection, a persistent cough with expectoration and dyspnea which in the subacute types, lasts for weeks or months, and in the chronic types for years with absence of grave constitutional changes and with little impairment of nutrition. The physical signs are slight or absent, dullness at one base with persistent fine moist rales being the commonest. The lesion is not progressive, tubercle bacilli are never found and the x-ray signs are surprisingly scant, considering the extent of the physical signs. Fever is slight or absent, but may occur with exacerbations. Occasional attacks of pleurisy may occur.

The doctor details several very interesting cases illustrative of conditions which closely simulate tuberculosis and works out the diagnosis which was finally made.

He sums up by stating (1) that subacute and chronic types of nontuberculous pulmonary infection are not rare; (2) that they may closely simulate pulmonary tuberculosis; (3) they are usually basal; (4) that symptoms and signs are greater than the constitutional impairment; (5) that the signs are not progressive; and (6) that the tubercle bacillus is always absent and the x-ray signs in the lungs are usually meager. He ends with the warning not to let the above facts cause one to relax the keenness of his watch for early cases of pulmonary tuberculosis.

INDICATIONS FOR MASTOIDECTOMY

Dr. La Verne B. Spake, in *The Journal of the Kansas Medical Society* for November, 1924, gives the signs which indicate the necessity for surgical intervention in mastoid inflammations as follows:

"Earache due to mastoiditis, if of primary origin, requires early incision of drum; ice coil for twenty-four hours; absolute rest; two hour pulse and temperature chart; and watching patient for a few days. If mastoiditis complicates otitis media and the following indications arise, mastoidectomy is indicated.

"1. Auricular displacement so commonly seen in children, with edema or subperiosteal abscess.

"2. Vestibular irritation; nystagmus; vertigo.

"3. Tenderness on pressure, extending beyond the limits of antrum, showing no tendency to diminish, within five or six days, following incision of drum.

"4. Marked variation in pus discharge; maximum flow too great to be explained by tympanic lesion, pain and tenderness.

"5. Mastoid symptoms have been present and, having disappeared, reappear."

INSULIN BY MOUTH

In *American Medicine* for October, 1924, Dr. Henry R. Harrower, of Glendale, Calif., publishes some interesting results obtained by the oral administration of an alcoholic extract of pancreas tails to rabbits and to human beings. This extract does not contain insulin, as such, but is of such a character as to show insulin-like effects, if any.

This Langerhausian fluid extract was given to 18 normal rabbits, under standard conditions, in doses of from 4 to 10 mils, and, in 17 of them, the result was a lowering of the blood sugar percentage of from .006 to .059 within an hour. In one case there was a rise of .006. In 5 control cases, where like amounts of 85 percent alcohol alone were injected, the changes in the blood-sugar were negligible. (Greatest reduction .004.)

The preparation was then administered to 9 human diabetics, in doses of from 4 to 20 mils, with a resulting decrease in blood-sugar in every case, running from .012 to .078, within one hour.

It seems probable that an oral form of insulin will be available to the profession before long.

ANTISTREPTOCOCCIC SERUM IN ERYSIPELAS

There is probably no disease which is more evenly distributed among the branches and specialties of medicine than erysipelas, which, perhaps, accounts for the wide variety of local applications advocated for its treatment. Dr. H. Jerry Lavender, in *The Ohio State Medical Journal* for November, 1924, mentions no less than eighteen of these.

In contrast with this, we have one general measure—antistreptococcic serum.

Doctor Lavender analyzes 150 cases which received local treatment alone, and 100 cases which received local treatment plus the serum.

Where local treatment alone was used, the temperature became normal in an average of 8.3 days and patients left the hospital in 14.3 days. When serum treatment was added, the former figure was reduced to 5.4 days, and the latter to 12.4 days. These figures were more impressive in cases where treatment was instituted early. When serum was given before the fourth day of the disease, the normal point was reached in 3.9 days and hospitalization lasted only 10.6 days.

An initial dose of 20 Cc. of polyvalent antistreptococcic serum was given intravenously, without preliminary desensitization, and was repeated every 12 hours as long as high temperature persisted (usually 3 or 4 injections sufficed). In extremely toxic cases, the dose was increased to 50 or 60 Cc. per injection.

Little or no discomfort was experienced by the patients in most cases. The doctor's experience leads him to believe that the serum has no preventive value in these cases.

POSTOPERATIVE CARE

In *The Nebraska State Medical Journal* for November, 1924, Dr. L. M. Stearns, of Kearney, Neb., presents a brief and very practical and helpful article on "Postoperative Care."

Dr. Stearns calls attention to the fact that the details of the care of patients before and after operations are often overlooked by surgeons, and that, frequently, these details make the difference between a speedy and comfortable convalescence and a delayed and difficult one. He gives concise and workable directions for carrying out these details.

Some of his suggestions follow:

"Postoperative nausea is materially lessened by using morphine and hyoscine in conjunction with the anesthetic and the free instillation of normal saline solution in the lower bowel just previous to the operation. Following the operation, it has been my habit to allow my patients a glass or two of warm soda water when not otherwise contraindicated. When this is vomited it is followed immediately by eight or ten minims of 1 to 10,000 adrenalin chloride solution in a half ounce of warm water.

"To lessen tympanites, the patient is instructed to eat lightly the day before operation, unless contraindicated. The morning of operation the lower bowel is emptied by a simple enema. At the time of operation care is used in not needlessly exposing the bowel, care in placing the warm saline sponges, care in not making needless traction or inflicting needless trauma.

"It seems to me that it is needless to allow abdominal cases to suffer pain and in most instances an eighth grain of morphine or a half grain of codeine repeated as necessary, seems to be sufficient.

"It is my belief that cold water given in the first 48 hours after a laparotomy increases the tympanites and in my experience hot or warm water in small quantities, frequently repeated, seem to be best.

"It seems now that there should be only a careful shave previous to operation, the day before preferably, using a mild soap and water, taking care that the skin is not denuded or scuffed. This is followed by mopping the surface with alcohol and taping in place a sterile towel. At the time of operation a single coat of tincture of iodine, diluted one-half, is applied and the field is ready.

"Some of the newer antiseptic dyes as acriflavine are efficient and are not so apt to be followed by skin irritation as in the case of iodine.

"Strangulation of tissue by a tight suture, or rough handling of tissue are far more frequent causative factors in the production of stitch abscess than any other.

"In the removal of stitches from a nervous patient, if they are cut one day and allowed to remain until the following day they can be removed without pain. This is a suggestion that was published some time ago and is worth passing on."

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[The Editor has had personal and practical experience of the advantages of giving hot or warm drinks in the first 48 hours after operation, and heartily endorses this suggestion, as well as all the others.

An excellent preoperative hypodermic injection is a preparation known as "Hyoscine, Morphine and Cactoid" (H-M-C). When this is administered ½ to 1 hour before operation, the patient, if carefully handled so as to avoid undue disturbance, he frequently comes on the table in a state of seminarcosis, and requires very little ether.—ED.]

CALCIUM CHLORIDE INJECTIONS AT THE MAYO CLINIC

During the last two years, in the Mayo Clinic, patients with obstructive jaundice requiring operations have been given intravenous injections of calcium chloride, preoperatively, in order to reduce their coagulation time, and to assist in the prevention of bleeding. Five cubic centimeters of a 10-percent aqueous solution of calcium chloride has been given daily for three days, and the results—hastening of blood coagulation, as evidenced by a lowering of blood coagulation time, and the absence of postoperative hemorrhage in jaundiced patients—have been striking.

While quite certain that such injections were not deleterious to the kidneys, a series of experiments with dogs was recently undertaken by Doctors Bowler and Walters, of the Mayo organization. Upon completing them, the investigators (*J. A. M. A.*, Oct. 18, 1924) reported that they could find no pathological nor clinical evidence showing calcium deposits in the kidneys, or that these organs were structurally and pathologically changed after a course of calcium chloride injections, or their filtering power in any way interfered with.

A MODERN METHOD IN INFANT FEEDING

The feeding of infants who are so unfortunate as to be deprived of their mothers' milk is a problem which is perennial and frequently taxes the resources of the physician, so that any new light on the subject is always of the utmost interest.

In the October number of *The Chicago Medical Recorder*, Dr. W. A. Mulherin, of Atlanta, Ga., contributes a very interesting article on the feeding of infants with acidified milk and corn syrup.

The doctor states clearly the *raison d'etre* of his method, and describes the preparation of the formula as follows:

"Thoroughly shake one quart or one pint of fresh cow's milk, for the purpose of well mixing the cream with the milk. Boil for five minutes the amount of milk needed in the formula, in order to sterilize the milk. Put the milk on ice until it is cold—milk must be cold when lactic acid is added. Remove the scum from the milk. Add enough boiled water to take the place of water evaporated whilst boiling, so as to finish with the amount of milk with which you began. Slowly add, drop by drop, one teaspoonful (60 drops) of lactic acid for each 16 ounces of milk in formula. Gently stir milk while adding lactic acid. Thoroughly dissolve in the milk two level tablespoonfuls of Karo syrup (Blue Label) for each pint of milk in formula. More Karo syrup may be used for the average baby if digested. Divide the formula into the desired number of feedings, with requisite amount in each bottle. Keep on ice and warm to blood heat as needed."

The results obtained by Dr. Mulherin and by Dr. W. McKim Marriott, of St. Louis, by this method of feeding are extremely gratifying.

New Books

KANTOR: "DISORDERS OF DIGESTION"

The Treatment of the Common Disorders of Digestion. A Handbook for Physicians and Students. By John L. Kantor, Ph.D., M.D. Illustrated. St. Louis: The C. V. Mosby Company. 1924. Price $4.75.

There is scarcely any class of diseases which is of more interest to the general practitioner than the disorders of digestion, because, in these days, the average human being thinks he is too busy to pay any attention to his dietary habits, with the result that a very high percentage of the patients whom a doctor sees, come to him with gastrointestinal irregularities as a primary or secondary cause for the visit.

Great strides have been made in the diagnosis and management of abnormalities of the organs of digestion in the past few years, and to be successful in handling these cases, the physician must familiarize himself with the newer methods. The volume in hand is well suited to accomplish this highly desirable purpose.

The book is attractive in its physical appearance, and is abundantly illustrated with photographs, drawings and x-ray pictures.

It is essentially a discussion of nonsurgical treatment, and while it is not a large work it contains a surprising amount of up-to-date information and of practical and useable instruction for the general practitioner. This result is obtained by eliminating all unnecessary words and concentrating attention on conditions ordinarily encountered, together with clean-cut details of the technic of diagnosing and treating them.

No physician who has occasion to handle gastrointestinal cases at all can afford to be without this very useful book.

PEARCE AND MACLEOD: "HUMAN PHYSIOLOGY"

Fundamentals of Human Physiology. By R. G. Pearce, B.A., M.D., and J. J. R. Macleod, M.B., D.Sc. Third Edition. St Louis: The C. V. Mosby Company. 1924. Price $3.50.

This volume was not intended, primarily, for physicians but rather for those who, in taking up such lines of study as pharmacology or public health work, find that a working knowledge of human anatomy and physiology is essential to their progress.

Too much stress can not, however, be laid upon the necessity for a foundation of the fundamental biological sciences, on which to erect the structure of medical service of the highest type, and, as numerous important advances have been made in the science of physiology in the past decade, it behooves every physician who has not kept in touch with this work to bring himself up with the times.

The volume under review, while very elementary and sketchy, will at least orient one in modern physiological thought and enable one to read intelligently the current literature on the subject.

McNEILE: "OPERATIVE OBSTETRICS"

Notes on Pathological and Operative Obstetrics. By Lyle G. McNeile, M.D. Philadelphia: Lefax, Inc., Publishers. 1924. Price: Looseleaf edition including six-ring binder, $3.50; Bound edition, flexible, $2.00.

The loose-leaf system in textbooks seems to be steadily gaining favor, and Lefax, Inc., has for some time been publishing a very useful system of loose-leaf notebooks of all kinds and a series of handbooks for engineers, radio workers, etc.

The present volume is a rather large pocket-size handbook, with the data on the subject in very condensed form and in tabular arrangement where this is possible.

It is purposed to establish a loose-leaf service to keep the book up-to-date, and the whole arrangement should prove useful to medical students, especially.

MORELEY: "HEMORRHOIDS"

Hemorrhoids: Their Etiology, Prophylaxis and Treatment by Means of Injections. By Arthur S. Moreley. London: Henry Frowde and Hodder & Stoughton. 1923. Price $2.00.

The treatment of hemorrhoids is a problem which faces all members of the profession—except the otolaryngologists—all the time, but the literature, in the textbooks, has been widely scattered and fragmentary,

many authors seeming to feel it beneath their dignity to deal fully with such a minor and plebeian condition. When it is dealt with in the textbooks, it is generally from the standpoint of radical surgery.

The cases of piles which are met by the general practitioner are not, as a rule, such as urgently require radical surgery, and most of his patients strenuously object to such treatment, preferring to submit to the inconveniences of their condition rather than to undergo a general anesthetic and a period of hospital confinement.

Articles have appeared in the current medical journals, from time to time, dealing with the treatment of hemorrhoids by injection, but this is the first textbook on the subject which we have seen.

The book begins with a brief and clear consideration of the surgical anatomy of the anal region and of the etiology, prophylaxis, diagnosis and pathology of hemorrhoids. The bulk of the volume is devoted to a full discussion of the injection treatment, giving the technic in detail, together with the pathological effects, complications, recurrence rate and the advantages and disadvantages of this method. Comparison is made with the statistics of the various operative procedures. The subject is closed by the recital of 17 illustrative cases.

It is believed that this book adequately fills a distinct need which has long been felt by most general practitioners for a concise and authoritative discussion, in textbook form, of a subject which is of very general interest, and that the present volume will prove a welcome addition to almost any medical library.

BANDLER: "MEDICAL GYNECOLOGY"

Medical Gynecology. By Samuel Wyllis Bandler, M.D. Fourth Edition, Thoroughly Revised. With Original Illustrations. Philadelphia and London: W. B. Saunders Company. 1924. Price $8.00.

Every general practitioner sees many women patients every day, a large percentage of whom have something wrong with their pelvic organs.

Many gynecologists have a tendency to look upon a woman as a pelvis, with more or less unimportant appendages above and below it; and too many textbooks on the subject devote most of their pages to the technic of pelvic surgery.

Doctor Bandler has recognized that a woman is a complete organism and that conditions in her pelvis are intimately bound up with the condition of her organism in general. He has also considered the fact that many diseased conditions of the female urogenital tract are not surgical at all, and that many of the socalled surgical conditions respond well to other forms of treatment. In this volume, the term "Medical Gynecology" embraces all methods of treatment other than actual surgery.

The book contains chapters dealing with examinations; diagnosis; the various nonsurgical methods of treatment; vitamines; the endocrine glands (this chapter is quite full and interesting); the associated nervous conditions, which are of the highest importance; and the various diseases which are amenable to nonsurgical treatment. The use of radium and x-rays receives full consideration.

This book should be of the greatest service to physicians who desire to study their patients as *individuals*, who happen to exhibit some form of pelvic pathology, and to relieve or cure them without resort to major surgery.

"THE OPERATING ROOM"

The Operating Room. Instructions for Nurses and Assistants. St. Mary's Hospital, Rochester, Minn. Illustrated. Philadelphia and London: W. B. Saunders Company. 1924. Price $1.75.

It is always an advantage for a surgeon to be familiar with the way things are conducted in hospitals other than the one where he regularly operates.

It is absolutely essential that nurses and beginners in surgery shall have a practical working knowledge of all the multitude of small details which go to make up operating room technic.

The fame of the Mayo Clinic being international, it is of interest to any physician to know just how they go about it to get the results which they obtain in surgical cases.

From all three of the above standpoints, the manual under review is a valuable addition to the literature. Every step in the technic followed in the operating rooms at St. Mary's Hospital, Rochester, is given in clear detail, which overlooks nothing, leaves nothing to chance, and, yet, wastes no words.

The duties to be performed by each member of the operating team are explicitly stated, and the time when these duties should be done. The arrangement of the operating room is shown in words and illustrations.

There is a long series of operations for which lists are given of the instruments and dressings to be prepared. In the back are pictures of a number of instruments.

A very helpful book, which no surgical interne or nurse can afford to be without, and which will prove interesting and valuable to any man who ever does any surgery.

WALKER: "THE MALE GENITALIA"

Diseases of the Male Organs of Generation. By Kenneth M. Walker, M.A., M.B., B.C. London: Henry Frowde and Hodder & Stoughton. 1923.

The Oxford Medical Publications quite regularly present an attractive and well-groomed appearance which is quite in keeping with the character of their contents, which are almost always clean, accurate and to the point. The present volume is no exception to the rule.

Gynecology, or the study of the female reproductive organs, is a very large and well-organized specialty, but andrology, or the study of the male genetalia, has almost universally been combined with the consideration of the urinary organs and with venereal diseases. This volume is a textbook on andrology, pure and simple, and deals solely with the pathological conditions which affect the reproductive functions in the male.

No time or space is spent upon the general anatomy of the parts, but the author plunges *in medias res* from the first chapter. There is no useless verbiage. Every word counts. Where cuts are needed to clarify the text, they are used.

As the book is intended primarily for the general practitioner, the details of medical and minor surgical treatment are given in full, while the technic of the major operations is outlined sufficiently to enable the attending physician to adequately evaluate the results to be obtained by such treatment, and to intelligently direct the preoperative and postoperative care of such cases.

The book should be highly serviceable to the general practitioner and very interesting and valuable to the genitourinary specialist.

GLEASON: "NOSE, THROAT, AND EAR"

A Manual of Diseases of the Nose, Throat, and Ear. By E. B. Gleason, M. D., LL. D. Fifth Edition, Thoroughly Revised. Philadelphia and London: W. B. Saunders Company. 1924. Price $4.00.

This manual was written to supply students and general practitioners with the essential facts of Rhinology, Laryngology, and Otology in as concise a form as possible.

The more important facts of the anatomy, physiology, and pathology of the upper respiratory tract and ear have received careful consideration, so that the volume might prove sufficiently complete for study or reference by undergraduates during their college years and for practitioners taking a postgraduate course in laryngology and otology.

The details of inspection, examination, and diagnosis of the nose, throat, and ear conditions and the use of the commoner instruments of diagnosis and for the making of applications have received very careful and comparatively lengthy detailed description. The same may be said of minor operations. Methods of treatment have been simplified as much as possible, so that in most instances only those methods, drugs, and operations have been advised which, by the actual experience of the author, have proved essential to the accomplishment of the desired result. At the end of the book is a collection of formulas designed to represent more than a mere catalog of prescriptions; hence a detailed description of the better methods of use of each of the more important drugs has been interpolated, which it is hoped the reader will find useful and suggestive.

The history of the gradual development of some of the more important instruments, methods of treatment, and, more especially, operations has been considered of sufficient practical importance to be briefly outlined. In some instances the prognosis in cases not operated on has been accentuated by quotations from the writings of standard authors of the period before such operations were practiced.

The book contains numerous engravings, a considerable proportion being original or drawn from dissections made by the author.

This volume is an adequate example of the class of ready reference manuals for the student and general practitioner, and, as such, is highly valuable. It is in no sense intended for the otolaryngologist.

The present (fifth) edition has been thoroughly revised and somewhat enlarged.

MOORE: "NUTRITION OF MOTHER AND CHILD"

Nutrition of Mother and Child. By C. Ulysses Moore, M. D., M. Sc. (Ped.). Including Menus and Recipes by Myrtle J. Ferguson, B. S. Illustrated. Philadelphia:

J. B. Lippincott Company. 1924. Price $2.00.

The important discoveries in nutrition made during the past five years have revolutionized our ideas of dietetics. This volume present the facts of nutrition which have been accepted by schools of accredited standing everywhere. The book lays particularly emphasis on the newer conception of breast feeding, the building up of breast milk, vitamines and the mineral content of the diet. Nothing is included which has not been tested and proven of practical value in personal experience. The volume is written in simple straight-forward English and as untechnical as is feasible in the presentation of scientific facts. It is so arranged that it may be employed by nurses and social workers for instruction of mothers in the homes and in conducting short courses in nutrition.

Some of the chapter headings are: Newer Nutritional Knowledge; The Three Known Vitamins; Diet During Pregnancy and Lactation; Breast Feeding; Care and Feeding of the Premature Infant; Artifical Feeding; Some Common Fallacies in the Care and Feeding of Children.

MACLEAN: "RENAL DISEASE"

Modern Methods in the Diagnosis and Treatment of Renal Disease. By Hugh MacLean, M.D., D.Sc. Second Edition, Revised and Enlarged. Illustrated. Philadelphia and New York: Lea & Febiger. 1924. Price $2.50.

Unless one has had more time to follow the current literature than can be devoted to this very necessary part of our studies by the general practitioner, the chances are that one is far from being abreast of modern methods of estimating the soundness and functional capacity of the kidneys.

This monograph was written in response to requests from various medical men who felt the need of a short, practical account of some of the newer methods employed in investigating the renal function. In recent years considerable advances have been made in this branch of medicine, but much of the work lies scattered throughout the literature of various countries and is not accessible to the busy general practitioner. The present volume is an attempt to satisfy this want.

Since the book is intended principally for the general practitioner, it contains only the briefest allusions to theoretical points, and no references to literature are given. The statements made in connection with the various tests are founded on a very extensive experience of renal patients, and only those tests have been included which were found to be of practical clinical value and which are easily carried out.

In connection with the subject of renal tests, a word of warning may perhaps be necessary. In every case the clinical symptoms must be carefully considered, but, as this part of the subject is discussed in all the ordinary textbooks, it was considered superfluous to devote much space to it here. The necessity for a thorough study of the clinical manifestations can not, however, be too strongly emphasized. In many patients, especially in the earlier stages of disease, a careful correlation of the clinical condition with the results of the tests described will give information which could not possibly be obtained, in the present state of our knowledge, from a study of the clinical features alone.

While this little book is of especial value and utility to the laboratory worker, it is highly important that the physician should have a good working knowledge of the tests which are now being made, so as to be able to interpret intelligently the reports he receives. Such information he will find here.

NASH: "RANDOM RHYMES"

Random Rhymes and Poems for Home Folks. By Edwin A. Nash, M.D., of Peterson, Iowa. Chicago: Stearns Bros. & Co., Publishers. Cloth and Boards, $1.25; Stiff paper, 80 cents.

BRUGSCH: "GESAMTE MEDIZIN"

Ergebnisse der gesamten Medizin. Unter Mitwirkung hervorragender Fachgelehrten. Herausgegeben von Prof. Dr. Th. Brugsch. Fünfter Band. (Four Parts.) Berlin und Wien: Urban & Schwarzenberg. 1923.

BRUGSCH & SCHITTENHELM: "LABORATORIUMSTECHNIK"

Klinische Laboratoriumstechnik. Herausgegeben von Prof. Dr. Theodor Brugsch und Prof. Dr. Alfred Schittenhelm. Zweite, vollständig neu bearbeitete Auflage der "Technik der Speziellen Klinischen Untersuchungsmethoden." II. Band. Berlin und Wien: Urban & Schwarzenberg. 1924.

KLEMPERER: "KLINISCHE THERAPIE"

Grundriss der klinischen Therapie innerer Krankheiten. Von Prof. Dr. Georg Klemperer. Unter Mitwirkung von Oberarzt Dr. L. Dünner. Zweite Auflage. Berlin und Wien: Urban & Schwarzenberg. 1924.

Current New Literature

To assist doctors in obtaining current literature published by manufacturers of equipment, pharmaceuticals, physicians' supplies, foods, etc., CLINICAL MEDICINE will gladly forward requests for such catalogues, booklets, reprints, etc., as are listed from month to month in this department. Some of the material now available in printed form is shown below, each piece being given a key number. For convenience in ordering, our readers may use these numbers and simply send requests to this magazine. Our aim is to recommend only current literature which meets the standards of this paper as to reliability and adaptability for physicians' use.

Both the literature listed below and the service are free. In addition to this, we will gladly furnish such other information as you may desire regarding additional equipment or medical supplies. Make use of this department.

M- 22 Biological Products for Human Use. With Indications for Use, Dosage, Price List, etc. Gilliland Laboratories.

M- 29 Oral Health, and the Relation of Diseases of the Teeth and Gums (Pyorrhea) to Diseases of the Body. 24-page booklet. The Dentinol & Pyorrhocide Co.

M- 31 The Romance of Digitalis—The Story of Its Discovery. 12-page booklet by Hoffman-LaRoche Chemical Co.

M- 32 Local Inflammation and Its Rational Treatment. 16-page booklet. The Dionol Co.

M- 41 Specific Urethritis. 16-page booklet. Riedel & Co.

M- 51 Treatment of Syphilis. 32-page booklet. Dermatological Research Laboratories.

M- 55 Your Prestige and Profit. 8-page booklet. The Carroll Dunham Smith Pharmacal Co.

M- 58 A Symposium on Yeast. 24-page booklet. The Fleischmann Co.

M- 60 Formula B. The Guardian Lotion. The modern antiseptic, astringent and deodorizing lotion for the mouth and skin. 8-page booklet. The Pepsodent Co.

M- 63 Arsenauro and Mercauro. 100-page booklet. Parmele Pharmacal Co.

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